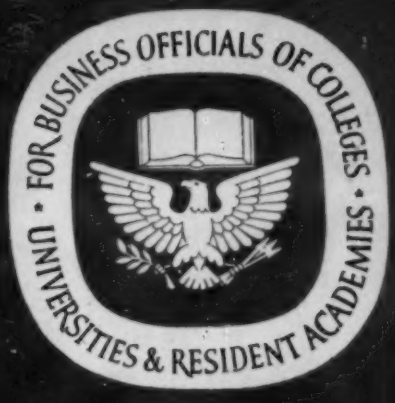

College and University Business

JULY 1946: Problem No. 1—Heating ★ Personnel Policy at Illinois ★ Care of Campus Lawns ★ Check List for Heating Systems ★ Research and Patents ★ Cafeteria vs. Family Style ★ College Store Management

EDITORIAL

THE FIRST ISSUE of COLLEGE AND UNIVERSITY BUSINESS marks the fruition of a plan conceived eight years ago by the publishers of *The Nation's Schools* and *The Modern Hospital*. We recognized then the need for a journalistic service for those engaged in the business administration of institutions of higher learning and of private secondary schools having residence facilities. We explored the possibility of extending the scope of *The Nation's Schools* but almost immediately found that, although some problems were common to public school administration and to the business management of colleges and universities, the divergence of interest in many matters was so wide as to make such an undertaking impracticable.

The value of specialized editorial service to a business or professional group lies precisely in concentration of editorial purpose. Any dilution of editorial material is detrimental to all those served. Thus it became evident that, when the time was ripe, it would be desirable to set up a wholly new magazine concentrated upon the highly specialized interests of the college business administrator. The time, we believe, is ripe and the magazine is here. Its sole purpose is to help those who manage the business affairs of institutions of higher learning.

It is fitting that the reader of a magazine know not only its purpose but the responsibility and authority of the publisher. We introduce ourselves as publishers with a background of thirty-three years of experience in the production of professional magazines serving two institutional fields: public school administration and hospital administration. *The Modern Hospital* was established by the present active head of this company in 1913. *The Nation's Schools* was established in 1928. The Nation's Schools Publishing Company, Inc. is a wholly owned subsidiary of The Modern Hospital Publishing Company, Inc. Each of these magazines is the recognized leader in its field.

We believe that the publisher of a professional magazine should be a leader of the field he serves, unafraid to voice what he believes is for the best interest of his readers. We also recognize that leadership must come through knowledge and understanding of the field he serves and his ability to attract as contributors the people of outstanding achievement in that field. We know that neither comes overnight. We know that mistakes are possible, even probable, and humbly hope to make as few as possible. That the new magazine may have at all times the best possible counsel, we have obtained as members of an editorial board and as consultants a group of men distinguished in the various phases of college business administration.

In format and makeup, COLLEGE AND UNIVERSITY BUSINESS departs sharply from accepted practice in business magazine publishing. Instead of interspersing reading material with advertisements, we have segregated all editorial material (except for information about new products) and have placed it ahead of a section of solid advertising. We believe the reader will appreciate having his reading of both editorial and advertising pages unhampered. We believe that information about products and materials with which colleges are built, operated and maintained is as important as the contributions of editors and authors; this type of makeup places full emphasis on both.

We sincerely hope you like this first issue and promise our utmost effort to serve you better with each succeeding issue.

Otho F. Nail

President

FOR BUSINESS OFFICIALS OF COLLEGES · UNIVERSITIES & RESIDENT ACADEMIES ·

College and University Business

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Among the Authors

HAROLD W. HERMAN

HAROLD W. HERMAN, managing editor of COLLEGE AND UNIVERSITY BUSINESS, reports on the efforts made by American colleges and universities to solve the acute housing shortage for returning veterans. His survey covers data obtained up to April of this year. A graduate of Carleton College, 33 years old, he comes to COLLEGE AND UNIVERSITY BUSINESS from the United States Junior Chamber of Commerce where he was executive vice president. He admits being born in India. . . . DONALD E. DICKASON, who writes on campus personnel relations, has pioneered the program at the University of Illinois where he is director of nonacademic personnel. He has had extensive experience as college business officer at Wooster and in private business. He is an active Boy Scout leader, an ardent philatelist, a Rotarian and has two daughters and twin sons.

ALLEN H. KIMBALL

ALLEN H. KIMBALL wrote "A Campus Architect's View" just prior to his sudden death in the spring. He was head of the department of architectural engineering at Iowa State College and a graduate of the University of California. He did graduate work at M.I.T. and was particularly interested in research on campus planning. Swimming, gardening and water color painting were his foremost hobbies. . . . WILLIAM T. MIDDLEBROOK discusses universities and patents from the authoritative position of vice president, business administrator and secretary of the board of regents, University of Minnesota. A career as an executive of the Great Northern Railway, of service in World War I as first lieutenant in Army Transport Service, and as an industrial engineer in Chicago preceded his entry into the educational field as controller at Purdue in 1922. He left in 1925 to accept the position of comptroller at the University of Minnesota and is now rounding out his twenty-first year with that institution in his present important position. His hobbies are fishing, golf and his four children. . . . DONALD J. HORNBERGER, treasurer, Ohio Wesleyan University, has had a special interest in operation of college farms as a business adjunct of the university. Graduate of the University of Michigan in 1921, he continued his formal education at Ohio State where he received his M.A. two years later. He is now in his twenty-fifth year of service with Ohio Wesleyan. In addition to being an author with a book to his credit, he indulges in fishing and stamp collecting.

M. M. CHAMBERS

M. M. CHAMBERS, assistant director of the commission on implications of the armed services educational programs of the American Council on Education, is author of 15 books. He has recently returned to the staff of the American Council after three years' service in the Army Air Forces where he attained the rank of major. He has prepared more than 250 articles for national educational and legal journals and, during 1941, had 13 signed articles in the *New York Times*, in addition to other extensive writing. His articles on legislation and legal decisions will be a regular feature.

PROBLEM NUMBER 1:

HOUSING

HAROLD W. HERMAN

Managing Editor
College and University
Business

COLLEGES, FACED WITH A TIDAL WAVE of returning students and war veterans, are using every resource available to prevent being swamped. With 300,000 veterans already on campuses and 750,000 expected next fall, the problem of housing has long since ceased to be a subject for academic discussion in faculty lounges.

College administrators in meeting this unprecedented volume of students have been realistic in their appraisal of needs and have shown initiative and resourcefulness in arriving at solutions.

In the main, the problem has been met by (1) construction of trailer camps on or adjacent to the campus; (2) the setting up of colonies of prefabricated houses; (3) doubling up in existing dormitory facilities; (4) conversion of classroom buildings or war plant housing projects into an integral part of the campus; (5) use of army barracks at near-by bases, and (6) construction of new dormitories or apartment buildings. One college converted marine tug deckhouses into student dwellings; another obtained a Coast Guard craft and set up a floating dormitory.

The following partial roll call of colleges and universities turns up interesting examples of the way in which students will be housed next fall:

The University of Kentucky has set up 200 prefabricated houses for married G.I.'s as a small city, Cooper Village. Each unit provides stove, icebox, kitchen sink, electric hot plate, coal stove, built-in cabinet, book rack, mattress, pillows, dresser, chairs, clothes cabinet. Tenants must provide blankets, linen, glassware, dining and bath supplies. Parking space for cars and a community laundry unit for every 50 houses are provided.

The University of Florida constructed Flavet Village, described by officials of the Federal Public Housing Authority as the most attractive student housing project in southeastern United States. Demountable buildings, these units were originally situated at Panama City to house war workers. They accommodate married veterans only and are attractively grouped on landscaped grounds. Paved streets and adequate street lighting are being added.

Part of the facilities at the Alachua army base, located 10 miles from the campus, will be used for the housing of single veteran students. Bus service will be operated between the university and the army base.

Yale University, by doubling up on undergraduate facilities, will expand its undergraduate housing by about 25 per cent for the fall term. More than 200 veterans and their families were placed in Yale-owned buildings or in dwellings and apartments in and around New Haven.

Yale converted 19 of its own buildings—former dormitories, private dwellings and a fraternity house—into multiple dwelling units for veterans

and their families; they now house 99 families, or 300 persons. To provide additional housing, Yale has obtained 100 Quonset huts which, divided into two apartments each, will provide apartments for 200 families.

Indiana University obtained facilities to accommodate an additional 1400 veterans on campus. The added housing as it now exists consists of Woodlawn Courts, trailer village for married veterans, which is in process of expansion to 300 units; North and South Hoosier halls, which are temporary dormitories moved from Jeffersonville, Ind., and Sharon, Ohio, and rebuilt adjacent to the university field house to accommodate 400 single men; reconversion of South Hall, a men's residence unit, to house married couples with the privilege of using a common kitchen; lease of Bloomington's USO center to house 200 single men; doubling up of men students in the dormitories; stretching of fraternity house occupancy to utmost capacity, and the setting up of emergency and temporary sleeping accommodations in the men's gymnasium.

Western State College, Gunnison, Colo., is remodeling Highland Village, a cluster of 49 campus summer cottages for year-round occupancy. Approximately half of the veterans in the student body are married.

Vanderbilt University constructed a $100,000 project including six new buildings and a total of 28 housing units. New buildings will include 16 basic units, each consisting of a bedroom-kitchenette combination with separate bath, and 12 expanded units which include a second bedroom. Each of the units will have complete housing conveniences, including heating, refrigeration and cookstove. Buildings are of cinder block construction.

Marietta College, Marietta, Ohio, recently acquired a 111 foot Coast Guard craft which has been converted into a floating dormitory, The Pioneer.

Alabama Polytechnic Institute at Auburn relieved the shortage by obtaining deckhouses of marine tugs from the U. S. Maritime Commission. Original cost of these to the government was $1800 each. Cabins, each of which will house four persons, are 7 feet wide, 16 feet long, 7 feet high and have a glass enclosed pilot house which may be used as a study room. Each deckhouse contains built-in cabinets, kerosene galley stove, a refrigerator, toilet, lavatory, table and two lower and two upper bunks complete with springs and mattress and has electric lights, ventilators and paneled and screened doors.

In addition to tug boat cabins, API is utilizing 74 apartment units formerly used by shipworkers at Panama City, Fla. The apartments have been completely redecorated and fully furnished. All utilities are included in the rent which is $30 a month for one bedroom units, $35 a month for two bedroom units and $37.50 a month for three bedroom units.

A reconverted government hospital at Opelika, 8 miles from Auburn, will be used to house 225 single men. Cost will be $111 a quarter for each student; room will be $15, board, $76.50 and transportation by a private bus line, $19.50. Plans are for breakfast and supper to be served at the Opelika dormitories and noon meals in Auburn at Graves Centre.

The University of California found the situation at Berkeley particularly acute because it had been customary for the students to obtain their own accommodations off campus in privately owned rooming and boarding houses. Dormitories were limited to two gift buildings that house only 90 men and 106 women. Through the use of 15 fraternity houses and operation of four dining rooms for residents of all 15 houses, and by many students' commuting long distances daily from home, the housing bulge was temporarily alleviated.

Contracts have been let for construction of residence facilities for 480 students. The project, including commissary facilities and dining room, has now been completed and is looked upon as only a small start in the building program for the university residence halls. Future structures will require more time to plan, finance and construct. The final permanent residence halls will have a capacity of 5000.

Tuskegee Institute is acquiring more than 70 housing units from a near-by airfield. The over-all program calls for experimentation with low cost housing of permanent design and the institution prefers to experience some housing shortage rather than construct buildings which will have to be destroyed in a few years.

The University of Minnesota has recently purchased for married veterans 15 acres of land between the main campus and the university farm campus and is negotiating for the additional 12½ acres for the purpose of constructing temporary housing and, later, permanent low rent housing. The university now has 214 trailers on the land; 39 convertible and 48 two family prefabricated houses. In addition, more than 100 Quonset huts are to be converted into apartments for veterans and their families.

Trailers are of both the standard and the expansible types and, like a regular trailer camp, have central toilet and laundry facilities. The prefabricated houses are wood structures with laminated wood ribs and roofs of the Quonset hut type. Units are fully insulated and are divided with a double partition 4 feet apart to furnish a vestibule and two large closets for each apartment. The area inside each apartment, exclusive of the closets, is 16 by 20 feet. Fully furnished and with a proportionate share of the service buildings, they cost approximately $1500 a unit.

Pioneer Hall, a dormitory with a normal capacity of 540, will be double decked to accommodate 925 single men.

In the stadium the university has established housing of the barracks type with room for 126 men; bunk space has replaced the boxing, wrestling, handball and squash-racquet courts. Study space is provided in wide corridors. Each man has a bed and a locker; linen and blankets are furnished. Other temporary accommodations are being provided for 60 men on the university farm campus.

In addition, the University of Minnesota will use 7 two story buildings located at the New Brighton ordnance plant, 9 miles from the campus. Three of these buildings are 36 by 200 feet, three are 36 by 150 feet and one is 36 by 100 feet. One of the larger buildings will house a cafeteria on the first floor and a lounge and study on the second floor. The rest of the buildings will accommodate 620 men.

Northwestern University at Evanston, Ill., has launched one of the most ambitious of the housing programs by beginning on a $2,000,000 apartment hotel, the largest housing unit in Evanston, to provide accommodations for its faculty and students. The new building, with a frontage of 298 feet, will consist of seven stories and basement and will contain a minimum of 208 apartments of one, two, three, four and five rooms. Special accommodations for children will be provided in the build-

Above: Northwestern University's apartment building will house 208 families. Left: Trailer camp housing at University of Wisconsin. Below: Floating dormitory at Marietta College. Bottom: Moss-hung trees shade the attractive Flavet Village at the University of Florida.

ing, which will be soundproofed and carpeted for quietness and will have two playgrounds for tots and one for older children.

In addition, Northwestern is erecting 20 Quonset huts which will house 320 veterans. Each hut will contain four rooms and be provided with plumbing facilities and steam heat from the central heating plant. Furnishings will include double-deck bunks and desks.

The University of North Dakota is setting up a 72 room one story dormitory which formerly had been used to house war workers at Sturgeon Bay, Wis. The building was constructed in such a way that it may be "panelized" into sections for transporting by rail. The foundations will then be laid at Grand Forks and the structure erected by sections.

The building consists of a center unit, 60 feet square, containing a large lobby and utility, furnace and storage rooms. On opposite sides of the center unit are two dormitories each being 24 by 152 feet with rooms on both sides. A 4 foot hallway extends through the dormitory areas and the central unit. Complete bathroom and laundry facilities will be installed.

The University of Kansas first created an emergency housing office with a full-time director in charge. A survey of the city was then made in cooperation with the chamber of commerce to locate rooms and apartments. The university arranged also for use of apartments and houses at Sunflower Village, situated 12 miles from the campus and built originally to house employes of the Sunflower Ordnance Works. Adequate bus service is available. These units are two, three and four room apartments and will be reserved for occupancy by married veterans.

One hundred additional housing units have been made available by the F.P.H.A. Spooner-Thayer Museum has been converted into a dormitory for 100 veterans and the university is constructing other dormitory space for the September term.

The University of Michigan acquired a large number of housing units from Willow Run and located them on university property at Ann Arbor. The site has been developed with streets, walks and landscaping. Gasoline stoves for cooking were replaced with apartment-sized stoves using natural gas. Apartments rent for $25 per month with utilities furnished by the university except for oil for heating and hot water. A community laundry was located on the site for the convenience of the families.

Also arrangements for married veterans enrolled in the university were made with the management of the war housing project at Willow Run, and an allocation of 490 units of row housing was provided by the F.H.A. Facilities consist of a combination living room and bedroom, a kitchenette and bathroom. The apartments are heated by a coal cooking and heating stove. Rent, furnished, is $18.50 per month.

This project is 12 miles from Ann Arbor and transportation is provided to the veterans and their families by the operation of a shuttle bus line which makes nine trips daily. A community center and a library have been established in the area, and the services of a social director have been provided by the university. Schools, churches, stores and a theater also are conveniently located on the project.

University residence halls have been refurnished to allow for doubling up and additional facilities are being obtained at Willow Run, with plans for eventually housing 1000 single veterans in this manner.

Priorities for permanent housing, providing for a residence hall for 500 men and a similar structure for 500 women, have been obtained. Work has begun on a permanent apartment house project for married students and will consist of eight houses of 22 apartments each. These apartments will be ready for occupancy this fall.

The University of New Mexico reports it has broken its deadlock in housing for veterans and for women students. Kirtland Field of the A.A.F., located at Albuquerque, has relinquished seven bachelor officers' quarters, each building two stories high and capable of housing from 40 to 50 single veterans. One of the college dormitories, Bandelier Hall, has been vacated by Navy V-12 men and will go back to occupancy by women.

The University of Wisconsin has accommodated 4208 students and wives by means of emergency housing facilities. The normal capacity of university dormitories has been increased by 15 per cent through "doubling up" measures providing 300 additional capacity. A total of 191 trailers, with a capacity of 382 adults plus children, has been installed on one of the athletic fields. Facilities accommodating 1660 students have been provided at Truax Field, army air base 6 miles from the campus. Meals are available in a central cafeteria operated by the university at this housing facility.

This university is also housing 1866 students and wives at the Badger Ordnance Works, 34 miles from the campus. Meals are served in a central cafeteria operated by the university. Classrooms and laboratories are available also, and the university will conduct classes at the site of the housing development. Use of this facility will be limited largely to freshmen and sophomore students. Some faculty members will live at the housing site and others will commute from Madison. Students in special courses will be provided with transportation to Madison.

The University of Cincinnati provides life for 100 G.I.'s in a millionaire's mansion converted into a dormitory. Like many other institutions, the university has erected a trailer village, adjacent to the football stadium.

The University of Colorado has 212 trailer units in operation, renting for $20 and $25 each depending upon the size. Trailers cost approximately $300 each to install and will be amortized in three years. Surveys in the community have indicated that 300 rooms are available for student use. The regents have authorized the issuance of $2,000,000 worth of self-liquidating bonds to build permanent housing for veterans and for future married graduate students. All institutions in Colorado have been authorized to issue bonds for such purposes.

Michigan State College provides temporary housing for veterans by a trailer camp of approximately 400 units utilizing especially built service houses. The college is buying Quonset huts, housing 12 men each, which will be used for single veterans.

For the trailer units 15 log service buildings will be constructed and equipped with laundry and bathing facilities each serving 20 trailers. Construction is under way on a recreation hall, 24 by 112 feet, made of joined trailers, thus providing space for meetings and small dances. When the camp is completed, it will have 60,000 feet of black-topped roads and nearly 60,000 feet of board walk. Landscaping and painting are now in progress.

The University of Notre Dame is providing temporary housing in 220 units of mobile prefabricated houses to

rent for $27.50 and $30 each. These units cost $462 to move 300 miles and set up.

Georgia School of Technology has been able to place some of its married students in the houses vacated by former employes of the Bell bomber plant at Marietta, Ga., some 15 miles from Atlanta.

The University of Vermont will accommodate at least 650 veterans as a result of emergency housing measures. Former classroom buildings are being converted into a dormitory for 70 men, and 16 apartments for married veterans have been leased at Fort Ethan Allen. Fifty trailers will put in their appearance on the campus, and some fraternity houses are being converted into dormitories.

Purdue University has leased an air conditioned windowless war plant for barracks type of housing for 300 men and is constructing a trailer camp and new permanent dormitories.

Two hundred new permanent apartments for married students are being constructed at a cost of $1,118,000. These apartments are being built in sections of eight to twelve per unit.

In meeting these housing problems, the strain on college officials has been terrific. To their credit, the solutions which they have evolved demonstrate quick decisions and good judgment.

Above: Married students are provided 200 permanent apartments at Purdue University, in addition to extensive temporary facilities constructed or leased. Rent for apartments is $35 a month. Below: Hundreds of students are housed in temporary gymnasium barracks at University of Illinois.

OUR PERSONNEL POLICY

Not revolutionary but decidedly forward looking, the master plan for the compensation and working conditions of nonteaching employes at Illinois recognizes collective bargaining

DONALD E. DICKASON
Director of Nonacademic Personnel
University of Illinois

THE FIRST RECORDED ATTEMPT BY a major educational institution to set down in detail one master personnel policy that applies alike to all nonteaching employes was taken at the University of Illinois.

The board of trustees in June 1945 approved a statement of policy and rules relating to compensation and working conditions for nonacademic employes which has been described as a model labor policy. Whether or not that term should be applied without qualification, the reader can judge. Certainly, our policy has been the object of much attention, some praise and some mild consternation on the part of college and university administrators.

The university's two large centers are in Urbana, with its many colleges, schools and divisions, and in Chicago, where are located the colleges of medicine, pharmacy and dentistry, together with research and educational hospitals and other units. It has, also, scattered over the state other divisions and services which require certain nonteaching employes.

Lending the vitally necessary support to the academic and administrative staff is a force of some 2500 nonteaching employes in from 300 to 400 classifications, in a range of trades and professions as wide as the range of the university's educational program. It was not easy to state one policy that would apply equally and without discrimination to employes in so many fields of work.

The administrative committee appointed by the president to draw up the policy recognized that its chief "must" was to present a single statement that would merit and receive the support alike of the whole academic and administrative staff and of the affected workers themselves. Many meetings of explanation and exploration were held with faculty and administrative groups, employe committees and representatives of organized labor.

The resulting 24 printed pages represent what the committee was after, one policy which can apply without discrimination or favoritism to all nonacademic employes. This policy has been accepted as fair, reasonable and workable by the teaching and administrative staff and by all groups of employes, both organized and unorganized. It is a unilateral contract between the university and its employes, signed by the university and accepted in good faith by employes.

The policy is *not* revolutionary. It *is* forward looking. And it is subject to change as changing conditions develop. It is liberal in its terms yet gives full protection to the management rights of the university. It looks the facts of employer-employe relationship in the face and evades no issues; it is thoroughly realistic. It takes into account conditions and technics which have shown their worth in good industrial personnel plans.

The policy recognizes that the university, with its 2500 nonteaching workers, must expect labor problems very similar to those encountered in the outside industrial world and that the day when a university can expect to live its life apart in an atmosphere of cloistered and academic hush has permanently passed.

• COLLECTIVE BARGAINING. The policy's frank acceptance of the principles of collective bargaining and its recognition of the rights of employes to choose, if they so desire, a bargaining agency by the democratic process of a majority vote have been somewhat of a surprise to many educational administrators. There are, and have been, labor unions on the Illinois campus. The university saw no reason to shut its eyes to reality or to refuse to deal with organizations that clearly represented their members. There has been expressed, on the other hand, a firm intention to treat all employes fairly and consistently, not in response to, or on account of lack of, group pressure but because that is the way it should be. No employe has to join a union to get his full rights; no employe is deprived of any rights because he joins.

• PREVAILING RATES. The university believes in the payment of the going community rate when that can be determined, and its wage and salary structure is built on that foundation. Subject to the necessary restrictions caused by the biennial schedule of budget appropriations for university operations, changes in local rates are followed as closely as possible in such groups as the printing crafts, the building trades and other operating and service areas.

• MERIT RATING. Position classifications and evaluations, however, in which single rates can be clearly fixed make up only a small percentage of the positions involved. The director of nonacademic personnel is responsible for fixing rate ranges for the remaining approximately 80 per cent of the positions, taking into account outside practice and using a job evaluation procedure developed in his department for determining proper relationships among classifications within the university.

Minimum automatic increases are provided up to the midpoint of any range, the maximum of which range is $235 a month or less. Approval of any larger increases to the midpoint and of all increases beyond the midpoint and in higher ranges depends largely upon the recommenda-

tions of supervisors and upon the results of a merit rating which is mandatory at least once each year. The policy provides that these ratings shall be available to the rated employes and each supervisor is encouraged to discuss the rating with each individual employe, using the constructive approach in both rating and discussion.

• WORKING SCHEDULES. Published as a supplement to the policy is an itemized list of all classifications with each allocated to its standard working schedule. A strong effort has been made to establish monthly rates for all permanent positions to get away from the hourly rate with its implications of temporary status or irregular work periods.

With the general trend in business and industry definitely in the direction of a five day schedule, the university hopes to continue its present efforts to the end that practically all employes eventually will be working on such a schedule.

The *principle of premium pay for overtime* beyond that regularly called for in these schedules is firmly established in this policy. Certain supervisory and administrative employes naturally are excluded from this provision which, in general, parallels accepted good business practice.

• BENEFITS TO EMPLOYES. The educational program available to employes is threefold. Special supervisory courses adapted for university use from the famed big three of the Training Within Industry program are provided in Human Relations, Job Instruction and Job Analysis. These courses are available to foremen and supervisors as well as to many academic department heads and faculty members.

The university, through its extension division, has done magnificent work for Illinois business and industry. It seemed only common sense to provide opportunity for the university's own employes to have the same benefits. Through this division, free evening classes are offered to all employes in such subjects as cooking, public speaking, blueprint reading, electronics, woodshop practice, business English, elements of supervision and the like. Hundreds of employes are participating with benefit to themselves and to the university service.

Finally, any employe may register under very broad provisions in any university course. No fees are charged to those receiving less than $1800 a year. Fees may be remitted for others whose work will be benefited by the chosen course. The university is being repaid liberally for any generosity which this plan shows to its employes in stronger loyalty and better service. There is a firm intention to strengthen further this educational program.

Two weeks' annual disability leave with full pay, noncumulative, is granted to all nonacademic employes with an additional week per year which is accumulated to a total of ten weeks. Through a 3½ per cent contributory participation in the university retirement system (supplemented by state funds), each employe is ensured of (1) a life income beginning at retirement age; (2) a death benefit to dependents, and (3) a generous disability benefit.

Paid vacations of at least two weeks are given to all employes, with three or four weeks allowed in certain positions, depending on the nature and responsibility of the work.

• GRIEVANCES. Knowing how often good labor relationships suffer serious setbacks when little grievances are not settled while they are little, the framers of the policy provided a four step procedure for handling them. The completion of each step is required within stated time limits with the penalty of a defaulted case on the party failing to meet the schedule. The first step is between employe (and/or his chosen representative) and his immediate supervisor; the second, between the employe and the department head; the third, an appeal to the director of nonacademic personnel, who is expected to examine the evidence objectively, hear the case and render an unbiased decision.

• ARBITRATION. In case the aggrieved employe still feels dissatisfied, the university provides the final step of neutral arbitration with agreement to accept the results of such arbitration. This is another "concession" which has disturbed some people, but Illinois feels that the very statement of its willingness to go that far will, in itself, prevent many grievances from ever reaching the point where arbitration will be needed.

• TENURE AND SENIORITY. Under university civil service, established by action of the legislature, classified employes have the usual civil service rights. These include tenure following a six months' probationary period with removal from the job possible only if supportable charges can be filed. Sustained seniority as to lay-offs is provided both within the classification currently held and back through any promotional line through which the employe may have come.

• PERSONNEL ORGANIZATION. The board of trustees provides an operating budget sufficient to establish and to maintain an adequate personnel administrative staff working under the director of nonacademic personnel.

This staff is responsible for carrying on a widely ranging program which includes practically all accepted personnel administration and employe relations functions. Provision is made for employment and selection; induction; training in all of its phases; activities; special employe publications; continuing position survey and class evaluation; merit rating; safety promotion and occupational disability claims work; budget review and control; negotiations with organized and unorganized groups; employe advisory committees on the employe-management pattern; close liaison with academic departments in providing opportunities for laboratory training for students in fields such as labor relations, industrial psychology, industrial arts and the like, and a general continuing review and revision of the wage and salary structure in order to keep relationships properly established. Offices and staffs are maintained in Urbana and Chicago, with the director spending some time each week in each center.

The adoption of the policy has not brought a labor management utopia to the University of Illinois. People still demonstrate the common human weaknesses at both the supervisory and working levels. Its adoption has brought, however, a clear understanding of exactly what are the university's intentions and beliefs and a new sense of mutual confidence and good feeling. It has removed many subjects from the field of uncertainty and controversy. It has established, once and for all, certain basic principles accepted by employe and employer alike.

OPPORTUNITY KNOCKS AT COLLEGE STORE

. . . and enters through the door of good management

RUSSELL REYNOLDS

Executive Secretary
National Association of College Stores

THREE OUT OF FOUR COLLEGES OWN their own book and supply stores. Few stores, however, make the most of their opportunity for service and profit. In spite of the fact that the school is teaching business methods, the store is often a poor example of modern merchandising.

Store histories fall into the same pattern. Many shortcomings can best be understood by remembering that the college store is a product of the last twenty-five years. The school, becoming dissatisfied with poor service in obtaining books and supplies for students, finally opened a room for the purpose. Generally located in a basement, such stores have grown slowly and without the benefit of trained merchandisers.

The most important problem of the college store is obtaining management of high caliber. Managing the store is a complex job requiring abilities and skills that are rewarded amply in the commercial field; most college store problems subside when the school pays enough to command the services of a competent person.

Too often school officials look around the campus and decide that a misfit some place else can run the store. This is a dangerous and costly step. An incompetent, inexperienced and poorly paid manager is costly to the school and to the store in lost service and profits. The school need not subsidize the store, for a good manager will earn his own way while the poor one will be responsible for actual losses or for lost income. The institutional store is not an agency for making stupendous profits for the school but is a service organization that can demonstrate its worth by showing a good profit.

The importance of employing a competent, experienced and well-paid manager cannot be emphasized too strongly. If a manager is able to do a good job, he can command a good salary in the commercial field. The fact that faculty salaries are low is no excuse for paying a manager on the same scale.

A college store manager must know many fields of merchandising. He must know textbooks and trade books. He must know stationery, jewelry, fountain pens, felt goods and many other special items. He must have a working knowledge of all the tools and materials of the technical fields from chemistry to mechanical engineering. In short, he has all the headaches of a full-scale department store

A customer receives courteous attention in the book store at Indiana University where spacious merchandise displays show thoughtful planning.

Lighting contributes to the cheerful atmosphere of this book store which serves the needs of Depauw students.

without the same volume and purchasing power. In addition, he must have the special ability of being able to get along with faculty and students.

Smaller schools can afford good management for their stores by increasing the duties of the manager so that he can demonstrate his worth and merit a salary that will keep him secure and happy. Included among his duties can be the supervision of the campus post office, of the duplicating and printing department, of athletic ticket sales and of general purchasing for the school. Since the book store receives wholesale prices, many needs of the school can be routed through the store advantageously.

A note of warning for all school officials in charge of book stores: Inventories have a tendency to increase. In normal times, officials should insist that losses not be concealed and carried in inventory. The dead stock should be written off during the period in which it became unsalable.

Prerequisites for a successful college book store include the following:

• LOCATION. A good central location with an adequate amount of space is essential. Since many stores grew like Topsy, the school has seldom been conscious of the problems and needs for space and location. The basement is the wrong location.

• EQUIPMENT. Modern fixtures and lighting are important. College stores are particularly deficient in this respect. Instead of resembling something out of the dark ages, the college store should be a replica of the best in modern merchandising. It might even be an experimental laboratory for merchandising technics.

• SERVICE. An efficient source of supply for student needs is the major prerequisite of a college store. Employment of a good manager with freedom to work will result in a first-rate store.

• TRADE BOOK DEPARTMENT. A trade book department is essential. The store and the school library should be the educational hub of the school with the store doing its part to see that students admire and own good books. A store without a good trade department is not living up to its educational responsibility. The size and scope will depend upon the potential market in the individual school; the department will not be built overnight but will be a process of preparation over the years. Though Randolph-Macon Woman's College has only 700 students, 40 per cent of the total book business is done in trade books.

No school store can be without a representative stock of such inexpensive books as Modern Library, Everyman, World Classics, Bantam Books, Penguin Books and Pocket Books.

The individual initiative of the manager combined with the cooperation of the faculty can effect astonishing results.

Qualifications for Book Store Manager

Education: College degree preferable, as position involves daily contact with educated people.

Experience: Merchandising experience either as clerk or as manager. Knowledge of books, general stationery, artists' supplies, confections, soda fountains, sporting goods, typewriters. No one, however, can be expected to know *all* of these lines when he starts.

Personality: Friendly, courteous and tactful.

APPLIED RESEARCH CALLS

Minnesota charts a course from discovery to royalty

APPLIED RESEARCH IN UNIVERSITIES has raised many perplexing administrative questions principally in relation to patents. Whatever policy is adopted and whether the administering agency is set up inside or outside the institution, the business officer is certain to be involved; therefore, he should have a general working knowledge of these questions:

1. What is patentable and how are patents obtained?
2. What must an inventor do to obtain a patent and to help make it available to the public?
3. How can the university assist in obtaining patents?
4. What disposition should be made of patents and royalties?

• HOW PATENTS ARE OBTAINED. Under federal law, patents may issue on *new* and *useful* discoveries and inventions, synonymous in patent law, relating to an art; a machine; manufacture; a composition of matter; any new and useful improvement in an art, machine, manufacture or composition of matter; a distinct and new variety of an asexually reproduced plant other than a tuber propagated plant.

To be patentable an invention must not have been known or used by others in this country before it was discovered or invented by the applicant for the patent. It must not have been patented or described in any printed publication in this or any foreign country before the inventor's discovery or invention of it or more than one year prior to his application for a patent on it. It must not have been in public use or on sale in this country for more than one year prior to the inventor's application, unless the same is proved to have been abandoned.

If an invention is made jointly by more than one person, all joint inventors must be named and must execute the application. If the invention is joint and the patent should be taken out in the name of one as a sole inventor, the patent is void. If several persons obtain a joint patent for an item that was invented solely by one of them, the patent is void.

The patent application consists of (1) a petition requesting the commissioner of patents to grant a patent on a particular patent application; (2) the specifications consisting of a description of the invention "in such full, clear, concise and exact terms" as to enable any person skilled in that art to make, compound or use the invention; (3) the oath of the inventor as to representations in the application.

After it has been filed, each application is assigned to a patent examiner who, after search of the prior art, prepares "an action" in the form of a letter reciting which claims are allowable and which are rejected. In the case of each rejected claim the examiner states the reasons for rejection.

If an application is rejected, three courses of action are open to the inventor and to his legal counsel: (1) the application may be placed in condition for allowance, *i.e.* unallowed claims may be withdrawn and the necessary correction made; (2) the application may be abandoned, or (3) after "final rejection" the application may be appealed to the board of appeals in the Patent Office.

Should the applicant be unsuccessful before the board of appeals, a further appeal may be taken to the court of customs and patent appeals or suit may be brought against the commissioner of patents in the U. S. District Court for the District of Columbia.

The term of the patent, except for design patents, is seventeen years. Design patents, which protect the artistic merit of a device rather than its mechanical features, are granted for three and one half, seven or fourteen years.

The obtaining of patents requires skilled legal counsel trained in this highly specialized branch of the profession and preferably with training and knowledge in the scientific field of the invention. Patents may be issued to the inventor or to an assignee if an assignment or deed of transfer is prepared, executed and recorded in the patent office, but application must always be made by and signed by the inventor or inventors.

There is no definite length of time within which a patent must be issued by the Patent Office. The Patent Office average is between two and three years from the date of filing.

• WHAT INVENTOR MUST DO. As soon as a discovery is reported, the university, if it is to participate in the patent application and the resulting patent, is faced with the problem of determining the novelty and usefulness of the discovery. While the inventor is usually qualified to advise on the matter of novelty and usefulness, it is advisable to obtain a disinterested report or estimate. The inventor is the one person in the university best qualified to work with the university's patent counsel in studying the prior art, in the preparation of the patent application, particularly the specification and claims, and in the necessary revision of these claims during prosecution before the Patent Office. The law also places upon the inventor or inventors the necessity of executing the application under oath.

Good records are essential to patent prosecution and are of critical importance in contested cases. The records must be kept, dated and witnessed by someone familiar with the facts, and the inventor should see that fellow workers witness the work as it develops and that they witness the tests showing success of the work. Recommendations of the U. S. Department of Agriculture follow:

1. A description of the invention should be made as soon as it is con-

FOR A PATENT POLICY

WILLIAM T. MIDDLEBROOK
Vice President, Business Administration
University of Minnesota

How Would YOU Answer?

1. *Shall staff members be encouraged to patent laboratory discoveries?*
2. *Shall staff members be required to assign patents?*
3. *To what body shall patents be assigned—the public, the university, an organization affiliated with the university or an outside organization?*
4. *If the university or an affiliated organization does hold patents, how shall the patents be licensed and exploited and what disposition shall be made of any royalties?*

ceived. The description should be dated and witnessed by disinterested and trustworthy persons after the invention is explained to them. These witnesses should be intellectually capable of understanding the invention.

2. Thereafter, notes should be made of all work done in connection with the invention. These notes should comprise a complete record, in as much detail as is practical, of what was done, when it was done and the witnesses who have observed it. These witnesses should also sign the notes.

3. Especially important is a demonstration that the invention will operate successfully. Careful notes of this phase of the work should be made, dated and witnessed. The tests should actually be seen by the witnesses.

The aid which the staff member inventor may give does not cease with the filing of the patent application or the issuance of the patent. With the issuance of the patent, and even before it, the business officer is faced with the problem of making that particular invention available to the public for use. This means participation by the staff member in contacting an interested manufacturer and in licensing negotiations, whether those negotiations are carried on directly by the university or by an allied or affiliated outside foundation or any other agency.

From the foregoing it is clear that a heavy responsibility rests upon the staff member. He needs a patent manual which outlines the university policy, organization and procedures, as well as general information on how discoveries are patented.

• HOW UNIVERSITY CAN ASSIST. Any real assistance on the part of the university in obtaining and administering patents must flow from an expressed willingness (1) to establish machinery to aid in determining the novelty and the usefulness of a discovery, (2) to provide funds under stated conditions for the employment of competent patent counsel and for the prosecution of the patent application, (3) to accept assignment from the staff member of the patent application and/or the patent, (4) to undertake itself, directly or through an allied agency, the licensing and the other responsibilities incident to the administration of patents and (5) to assume custody and disposition of any royalties arising from patents not dedicated to the public.

At the University of Minnesota we established in 1938 a patent committee consisting of the comptroller, the dean of the law school and the head of the Mines' Experiment Station. This committee agreed (1) to consider applications without regard to whether the patent was developed by the staff member in or outside of his general field of university employment and with or without the use of university facilities and funds and (2) to consider applications from nonstaff members only under special circumstances and to authorize the patent counsel to make formal application for patents after specific approval by the board of regents.

The University of Minnesota now has or is processing about 40 patent applications. Some of these patents have resulted in significant royalties, but none has had the spectacular success of Wisconsin's Steenbock Vitamin D patents. So far no patent applications have been sponsored for nonstaff members. Generally more patent applications have been the indirect result of fundamental research than the result of directed cooperative applied research.

• DISPOSITION OF PATENTS AND ROYALTIES. Patents, except those obtained for dedication to the public, are salable assets. In some instances the university has a heavy investment in the discovery and in the patent protection of it. A positive promotional effort is needed to sell or license a patent. I hope to add to my business staff a young man trained in business and

in engineering or other sciences who will sell and police our patents. Such young man should easily pay his way.

Our most perplexing problems have centered around the form of the license agreement, the main question being whether the license is exclusive or nonexclusive. Each patent has been approached on the assumption that the University of Minnesota is a publicly supported institution and that its discoveries should be made available to all companies serving the public, particularly those operating in the state.

LICENSE AGREEMENTS

The difficulty of this approach has been that most laboratory discoveries, to make them commercially useful, have required further "pilot plant" research and the solution of many production problems. It is understandable that companies are unwilling to assume the costs of added research and the solution of production problems unless there is some chance for them to recoup. Only an exclusive license, either for the life of the patent or for some lesser period, gives them this chance. We have met this problem in a number of instances by granting an exclusive license for a period of seven instead of seventeen years, the statutory life of a patent.

Our experience with patents has indicated that the license agreement should contain some or all of these provisions:

1. For control by the university of discoveries resulting from further research carried on in the university and in the licensee's laboratories (exclusive).

2. For a minimum annual guaranteed royalty where royalties are based upon a percentage of sales (exclu sive).

3. For a division of the cost of additional patents (exclusive).

4. For obtaining foreign patent protection together with a sharing of the cost of such foreign patents (exclusive).

5. For periodic reports of sales and payment of royalties.

6. For the prosecution of infringements and distribution of recoveries (exclusive).

7. For fair and reasonable prices of any products sold under patents.

8. For requiring the licensee to refrain from making any unwarranted or extravagant claims in its advertising and from using the name of the university or any of its staff members in connection with sales or advertising except with a prior written approval of the university.

9. For retaining to the university right to publish the results of any further research undertaken, provided that the prospective patent rights are not jeopardized by such publication.

In recent years the demand for cooperative research in some university laboratories has increased beyond the availability of staff and facilities. On Feb. 19, 1943, the Minnesota board of regents took the following action relative to cooperative research with outside persons or organizations:

1. That, unless otherwise provided in the agreement, patents shall be controlled by the university.

2. That the university will be willing to consider the granting of a nonexclusive license (shop rights) to the cooperating person or organization that provides funds for the direct and operating overhead costs of the research.

3. That if the research undertaken by the university is a continuation of research already initiated by the cooperating person or organization, if the research results of the university require further development work for commercial application or if for other reasons the public interest can thus be better served, the university will be willing to consider an exclusive license for a limited period (from five to seven years of the seventeen year patent life) or even for the life of the patent where it is clear that the public interest will be served, provided the university receives full reimbursement for all costs and a reasonable royalty with a minimum annual amount of such royalties guaranteed to ensure that the patent is used by the licensee.

DIVISION OF ROYALTIES

Our patent committee took an early stand on the disposition of royalties. In 1938 it recommended and the regents approved that, after deduction for the cost of obtaining the patent, the policy be as follows:

1. That the division of royalties be 25 per cent to the staff member and 75 per cent to the university when the patent is in the general field of the staff member's employment and university funds and facilities have been used in development of the patent.

2. That the division of royalties be 50 per cent to the staff member and 50 per cent to the university when the patent is outside the general field of the staff member's employment and university funds and facilities are not used in the development of the patent.

3. That when the patents are outside the general field of the staff member's employment *or* university funds and facilities are not used for the development of the patents, the division of royalties be somewhere between 25 and 50 per cent to the staff member and the remainder to the university.

Although there is no published policy, it has been our practice to dedicate the university's share of royalties to research in the same field or in allied fields. Some provision should be made for promotional expense and for a reserve to cover future patent application costs.

So You're Planning a Student Union!

Porter Butts will point out in the August issue the costly errors made by most universities in planning a student union. His "cautions" regarding student union planning may mean money in the bank for your institution.

COURT DECISIONS ON SUBSCRIPTIONS

M. M. CHAMBERS
American Council on Education

A SUBSCRIPTION TO A SCHOOL OR college, although often popularly thought of as only a promise of a gift, must actually be a contract if it is to be legally irrevocable during the subscriber's life and enforceable against his estate after his death.

The courts frequently have to decide questions relating either to the validity of the subscription as a contract or, if its validity is unquestioned, to the performance of the stipulated conditions by the parties.

VALID CONTRACT DEFINED

The disputed issue is usually whether there is a "consideration" (technically defined as "some benefit to the promisor or detriment to the promisee, inducing the promise") or whether the subscription is merely an unsupported promise revocable by the subscriber and incapable of surviving him.

Through two centuries the courts have generally favored the enforcement of bona fide subscriptions and three distinct theories of "consideration" have been evolved: (1) the doctrine that a contract is created when the institution takes a step in reliance on the subscription, such as beginning the construction of a building; (2) the theory that the promises of several subscribers to the same enterprise constitute a "consideration" each for the others, and (3) the doctrine that the general benefit to the community which the subscriber must have contemplated is a sufficient consideration.

The second theory was under scrutiny in three recent cases, with somewhat equivocal results. A subscriber signed an instrument reciting: "In consideration of the contributions and gifts to be made by others to the endowment and equipment funds of Wesleyan University, Middletown, Conn., I hereby agree to give to the trustees of said university five thousand dollars . . . , which gifts will aggregate eighty-nine thousand dollars. These gifts are to be applied toward the endowment, in the name of Chester D. Hubbard, of the Chair of Economics and Social Science." Seven years after the death of the subscriber his executors gave a demand note for the $43,000 then unpaid. Eventually the university sued the estate on this note and met defeat in the highest court of West Virginia by a divided decision.

The majority of the court, speaking through Justice Kenna, adjudged the original subscription to be "only a continuing offer to become legally bound to pay, if and when the trustees procure other pledges." Further, in the words of the court: "Wesleyan University is not shown to have altered its position in the least due to the pledge . . . ; it created no Chair of Economics and Social Science, incurred no obligations, suffered no detriment and parted with nothing."[1]

Vigorous dissent was entered by Justices Rose and Fox, who pointed out that another individual had subscribed $11,000 on the same day, and this had been paid in full. Also, free assets in the hands of the executors were believed to be sufficient to pay the Wesleyan claim in full. These two judges argued, to no avail, that the subscriber was not merely offering a gift but that his intent was to establish a memorial to his father, "a thing personally and peculiarly valuable to Hubbard individually." No doubt, said they, an offer to pay $89,000 for the erection of a statue, if legally accepted, would be a binding contract. Why should not the same apply for a chair of economics?

KENTUCKY DECISION CITED

A contemporaneous Kentucky decision is unequivocal. The Scott-Lees Collegiate Institute sued the administrator and heirs-at-law of a subscriber who had signed four promissory notes for $200 each.

Justice Fulton disposed of the matter tersely: "It was alleged that the notes were executed as a donation in consideration of the subscription of other donors to a fund of $50,000 which the institute agreed to raise and expend in the erection of a dormitory. This was a sufficient consideration."[2] The court was unanimous.

But the waters of Kentucky law were soon muddied. In the following year the same court had before it a subscription signed by man and wife in these words: "For the purpose of promoting Christian education, and in consideration of the gifts of others, the undersigned hereby agree to pay to Transylvania University at Lexington, Ky., $5000 payable as follows: 60 days after the death of the survivor of us. Bequests in my will amounting to $3400 to our relatives are preferred to this pledge."

JUDGMENT REVERSED

The survivor died in 1937, leaving an estate of $21,000 and a will executed a few days before his death, revoking all previous wills and bequeathing the entire residuary estate to his brothers and sisters. A lower court rendered judgment for the university on the subscription, but on appeal this was reversed with direction to dismiss.

Justice Tilford wrote the opinion, holding that the subscription was not supported by valid consideration and was, therefore, not a contract. He thought it was "merely an evidence of donative intent, of the nature of a testamentary disposition revocable before death."

In this opinion, the higher court somewhat surprisingly repudiated expressly the theory of mutual subscriptions binding each other and also the theory of community benefit, which was referred to as "inventing a consideration" to support a charitable subscription. It took care, however, to pay respect to the doctrine of promissory estoppel (steps by the college in reliance on the subscription) where properly applicable but evidently regarded it not applicable in this case."[3]

Again the court was unanimous. It did not expressly overrule its own de-

[1] Wesleyan University *v.* Hubbard et al., 124 W. Va. 434, 20 S. E. 2d 677 (1942).

[2] Hyden et al. *v.* Scott-Lees Collegiate Institute, 291 Ky. 139, 163 S. W. 2d 295 (1942).

[3] Floyd *v.* Transylvania University et al., 296 Ky. 196, 176 S. W. 2d 125, 151 A. L. R. 1230 (1943).

cision in the Scott-Lees case, though expounding doctrines apparently at odds with it. Justices Fulton and Tilford, respectively authors of the opinions in the two cases, participated and concurred in both. The explanation is probably in the fact that the Transylvania subscription did not expressly place any specific obligation upon the university or name any particular object, such as the construction of a building. Even so, a subscription payable after death should not be confused with a will. In order to hold that the instrument in the Transylvania case was testamentary in nature, the court had to introduce considerable confusion into Kentucky law regarding subscription contracts.

Within another year the same court found itself adjudicating the case of a subscription of $5000 to Transylvania University, payable 30 days after the death of the subscriber, with the added provision that, if his wife survived him, she should receive a life annuity of 6 per cent of the amount. This provision was accepted in writing by the university and Justice Thomas, speaking for the whole court, held that the university's promise to pay the annuity was a consideration sufficient to make the subscription a valid contract, enforceable against the subscriber's estate.[4]

In Pennsylvania a subscription of $5000 was made to the Stony Brook School in response to a drive to raise $500,000, of which $300,000 was to be allocated to erect the "John F. Carson Memorial Hall," pictured in prospectuses as a substantial and imposing three story brick building. The subscription was conditioned: "Initial cash payment of $2000 when construction of the John F. Carson Memorial Building is begun and balance at my convenience within five years."

The drive actually realized only $95,000 cash, of which $30,000 was paid to solicitors, leaving $65,000 net. A new infirmary was constructed at a cost of about $40,000, as planned, and about $25,000 was used to renovate an ancient wooden building by reinforcing it with steel girders, installing a new foundation and providing modern lockers and gymnasium equipment. Wooden columns were erected on the exterior face and an inscription was placed over the door reading "John Carson Auditorium and Gymnasium."

[4]Transylvania University, Inc., *v.* Rees, 297 Ky. 246, 179 S. W. 2d 890 (1944).

PERFORMANCE OF CONDITIONS

The Pennsylvania supreme court correctly held that the subscription was a contract, not a gift, and that the condition had not been performed: "It is no reflection on appellee's good faith; the hard fact is that it did not perform the contract."[5] Therefore, a lower court decree in favor of the school was reversed.

A nondenominational junior college for girls in Denver was in bad straits in 1935, with a mortgage of $101,000 on its plant and foreclosure threatened, with $42,000 in outstanding bonds secured by second mortgage, and with more than $37,000 of notes and accounts unpaid. Among the unsecured debts that would have been completely wiped out had the college failed was $10,605 owed to a printing company and evidenced by a note.

The first step in the college's campaign to survive was to ask the general creditors and second mortgage bondholders (who stood to lose all in case of failure) to pledge one half the amounts of their accounts and bonds as an incentive to other subscribers. All did so except the printing company, whose president signed a subscription of $2500 to be credited on the $10,605 account proportionately as payments of the account were made. He also wrote "on condition that sufficient amount is secured to pay all outstanding old accounts and the second mortgage bonds."

The college continued in operation and in 1937 broadened its subscription drive to include the building of a badly needed new dormitory. Solicitations and contributions continued until finally in 1941 payment was made in full on the last of the second mortgage bonds and old accounts and the college tendered the printing company the full amount of the note, less the $2500 pledge.

The company refused, demanded full payment of the note, sued and had judgment in the trial court, which was properly reversed by the Colorado supreme court. The only defense against the $2500 subscription contract was that some six years had been required for full performance of the conditions. This was obviously not a good defense and the subscriber was bound.[6]

[5]In re Carson's Estate, 349 Pa. 529, 37 A. 2d 488 (1944).

[6]Colorado Woman's College *v.* Bradford-Robinson Printing Company, (Colo.), 157 P. 2d 612 (1945).

Summary of Enrollment Trends in 133 Colleges and Universities* 1940-41, 1945-46, 1946-47

Types of Colleges and Universities	No. of Schools Responding	Based on 1940-41 as 100% — Lowest % in Any War Year	Enrollment % 1945-46	Anticipated Enrollment 1946-47
State Universities	28			
Lowest % reported		17.0	67.0	93.0
Highest % reported		86.0	139.0	154.0
Av. of all state universities		54.9	103.0	127.5
State Teachers' Colleges	15			
Lowest % reported		18.0	37.0	63.0
Highest % reported		58.0	100.0	130.0
Av. of all state teachers' colleges		32.7	60.4	94.8
Municipal Universities	10			
Lowest % reported		33.0	71.0	71.0
Highest % reported		90.0	160.0	325.0
Av. of all municipal universities		62.7	110.7	152.3
Private and Endowed	80			
Lowest % reported		6.0	38.0	88.0
Highest % reported		104.0	241.0	276.0
Av. of all private and endowed		61.6	101.8	129.6
All Schools Reporting	133			
Lowest % reported		6.0	37.0	63.0
Highest % reported		104.0	241.0	325.0
Average of all schools		57.0	97.5	126.8

*Prepared for the Central Association of University and College Business Officers by C. W. Hoff, University of Omaha.

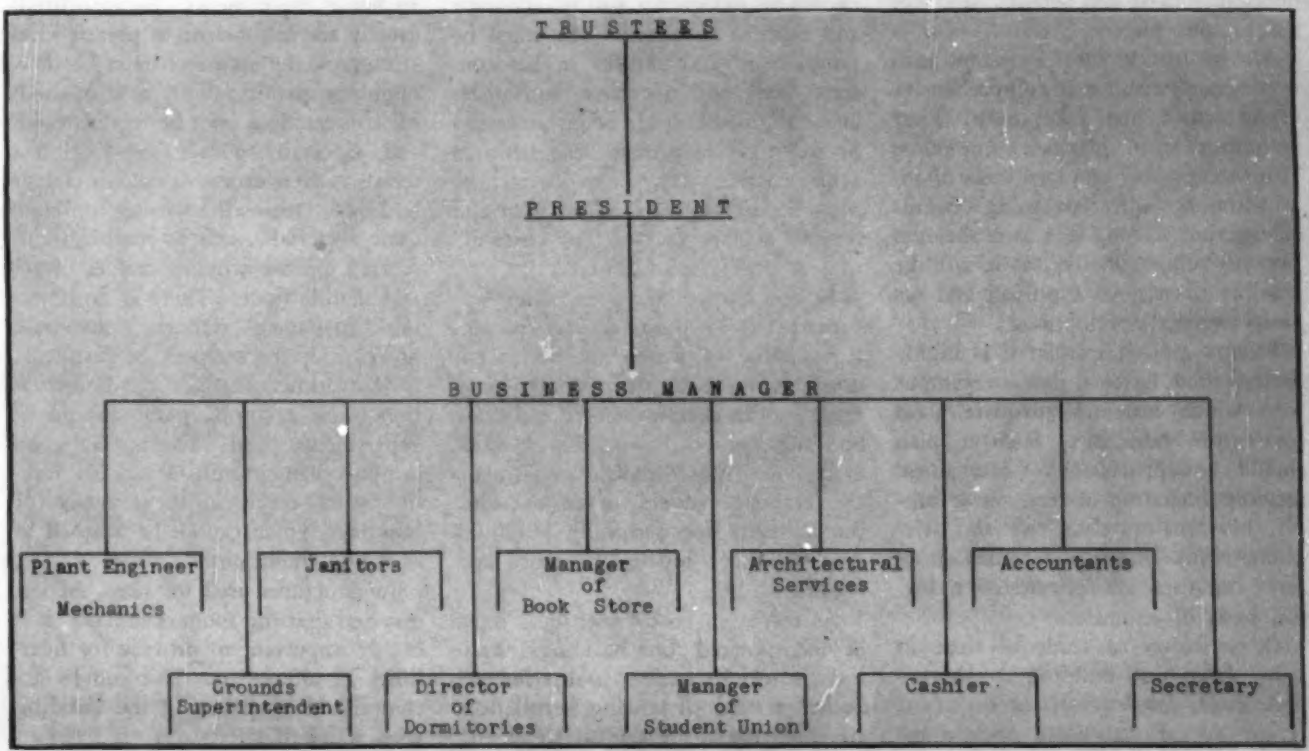
BUSINESS ORGANIZATION OF A SMALL COLLEGE

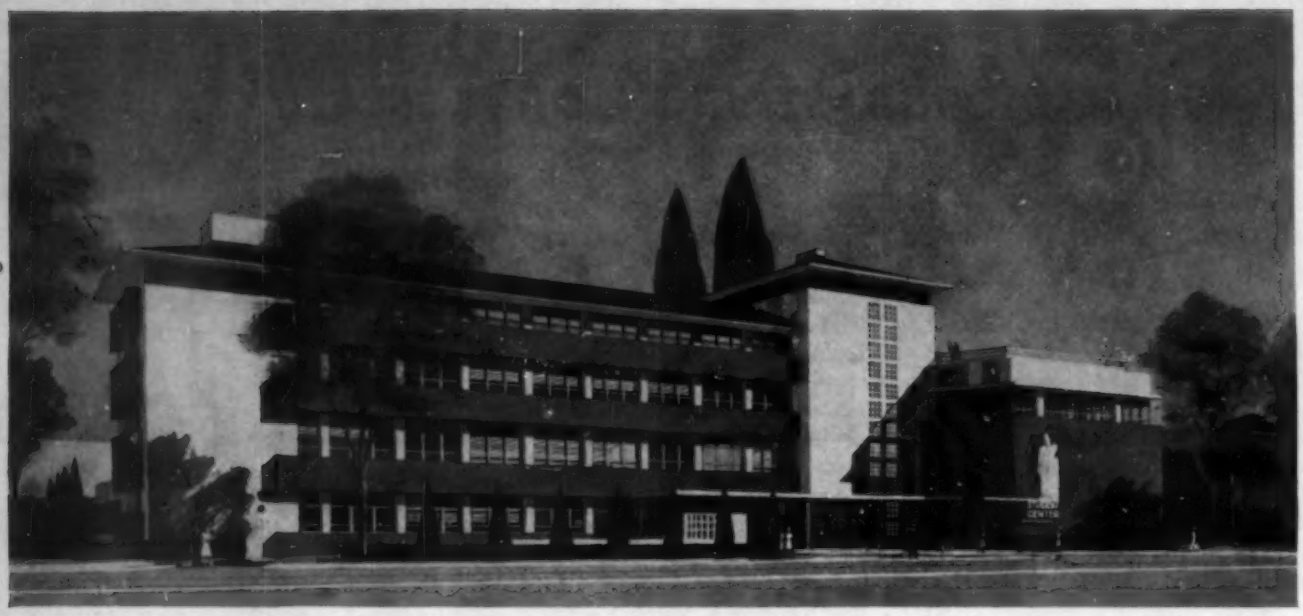
RALPH J. WATTS
Business Manager, Lawrence College
Appleton, Wis.

AT LAWRENCE COLLEGE, APPLETON, WIS., THE BUSINESS manager is responsible to the trustees through the president of the college who is the chief executive officer of the institution.

To the business manager are delegated all responsibilities involving the financial management of the college and the maintenance and operation of the physical plant. Specifically, the activities of the business manager include the following:

1. Preparation of the annual budget for current operations which, after review and approval by the president, is presented to the trustees for their consideration and action.
2. Control of expenditures based upon appropriations authorized by the budget adopted by the trustees.
3. Procurement of services (other than those of the faculty) and of supplies and facilities required in the operation and maintenance of the institution.
4. Arrangement for insurance of all types, either required by law or authorized by the trustees.
5. Supervision of new construction and of remodeling projects.
6. Maintenance, repair and operation of the physical plant.
7. Management of the dormitories, dining halls, infirmary and student union.
8. Financial management of intercollegiate athletics.
9. Accounting for and auditing of receipts and disbursements of student organizations other than intercollegiate athletics.
10. Management of the college book store.
11. Custodianship of current and plant funds.
12. Management of real estate and mortgages constituting assets of the endowment fund. (The treasurer of the college is the custodian of other endowment assets and directs the investment policy of the institution.)
13. Collection of student fees and other income due the college.
14. Discharge of financial obligations of the college incurred for its operation.
15. Accounting for financial transactions involving current, plant, endowment or agency funds and preparation of reports pertaining thereto.
16. Collection of student loans.





Wayne University Student Center Building, Detroit. Suren Pilafian, architect.

A CAMPUS ARCHITECT'S VIEW

ALLEN HOLMES KIMBALL

Former Campus Architect and Head of Department of Architectural Engineering Iowa State College

WITH THE INCREASING STUDENT ENrollments in colleges and universities, the design and construction of new buildings become necessary. Large sums of money will be expended; hence the need for detailed study of the campus plan.

No institution should attempt such a program without a comprehensive layout which may take up to thirty or more years for ultimate completion. With the passing of years, ideas of administrators and governing boards change, but so long as a sane skeleton plan is being adhered to, it will be possible to achieve a unified and orderly campus development.

From a practical angle it is highly desirable to have a definite campus plan which provides adequate areas for future buildings. Such a plan should show provisions for mechanical services, including sewers, water supply, heat mains, electricity and telephone trunk lines. Any future structures can then go forward on a logical basis of extension.

Conservation of students' time in going from one building to another necessitates an orderly arrangement of the educational units. Such a requirement challenges the campus architect to design for utility, economy and beauty. In addition, he must be sympathetic and skillful in his contacts with administrative authorities and staff members. In many instances he will have to provide leadership to achieve satisfactory results. In fact, he must be thoroughly familiar with and be able to cite examples of construction at other institutions.

In the United States there are approximately 1200 universities and colleges, some of which are better endowed with funds than others. As a result, some campuses have elaborate buildings; others have units of moderate cost. Whatever the investment, the architect should never overlook the necessity for designing buildings that will have low maintenance and repairs.

As the years go by new ideas must be incorporated into buildings. Radical changes in architectural styles and better methods of heating, ventilating, air conditioning, acoustical treatment, illumination and interior decoration must be considered. If areas are definitely set aside for future development, there will not be the need for trying to remodel obsolete structures to house departments. Because funds usually are insufficient to permit ideal structures, the architect must be thoroughly acquainted with new methods of construction and better materials and, especially, with native local materials. Often excessive cost in college buildings is caused by using too elaborate materials, such as marble wainscoting, bronze window frames or inlaid marble floors. There is no objection to using elaborate materials, however, if the cost can be justified.

Many times, changes in administration cause a complete regrouping of departments and disrupt a good campus plan. Again, a lack of foresight may result in the addition of buildings which cannot be adapted to changing conditions.

In structures used for class, laboratory and drafting room occupancy, it is highly important to provide for flexibility in room sizes. This can be accomplished by planning the building with standard sized bays or divisions

with movable, insulated metal partitions. Then if there is need for small classrooms in one term and large ones in another, the adjustment can readily be made. Such a scheme is predicated upon fixed hall locations. Standardization of offices can be worked out effectively in like manner.

In the past too many buildings have been planned to conform to one of the old traditional styles rather than multiple usage and, as a result, classrooms have had small windows which frequently were not at all satisfactory. The function of a room should determine the size and amount of glass area and such factor may give the architect considerable difficulty in exterior expression.

As the buildings on a college campus comprise an educational plant or factory for the dissemination of knowledge, it is highly desirable to stress utilitarian aspects. As long as height, width and length of buildings are in proportion, beauty can be achieved by using exterior materials which have pleasing color and are capable of giving a harmonious composition.

Problems in both horizontal and vertical circulation must be studied. It is always desirable to cut off stairways with fire protection doors and masonry walls, thus preventing the passage of noise and air from floor to floor and giving quieter rooms and better ventilation upon each floor.

Halls and corridors should be wide enough to provide against confusion and all exterior doors should open out to minimize fire hazards.

In planning college buildings, uniformity in the architectural treatment is desirable. This does not mean close adherence to a traditional style but rather a careful selection of materials for exterior expression. Variations in architectural details, fenestration and projections may give just the necessary balance to a well-coordinated group. Too many colleges have a wide variety of buildings which simply give date to the periods in which they were built and in no way form a satisfactory campus scheme.

An architect who is a resident on the campus has in mind the many intimate problems to be found in the planning of the buildings. He will be ever conscious of economical construction and the close relationships in the various divisions of the institution. It is his job to act as a consultant to the various officials and to give a type of leadership that cannot be furnished by the architect whose office may be in a distant city. Such a type of professional work will call for a comprehensive knowledge of engineering problems, equipment, furnishings and, to some degree, of landscaping also.

Most institutions have three types of buildings to be considered, namely, educational, recreational and housing facilities. Too many times each of these types is made to conform to some traditional style of architecture at the expense of good planning and economic maintenance.

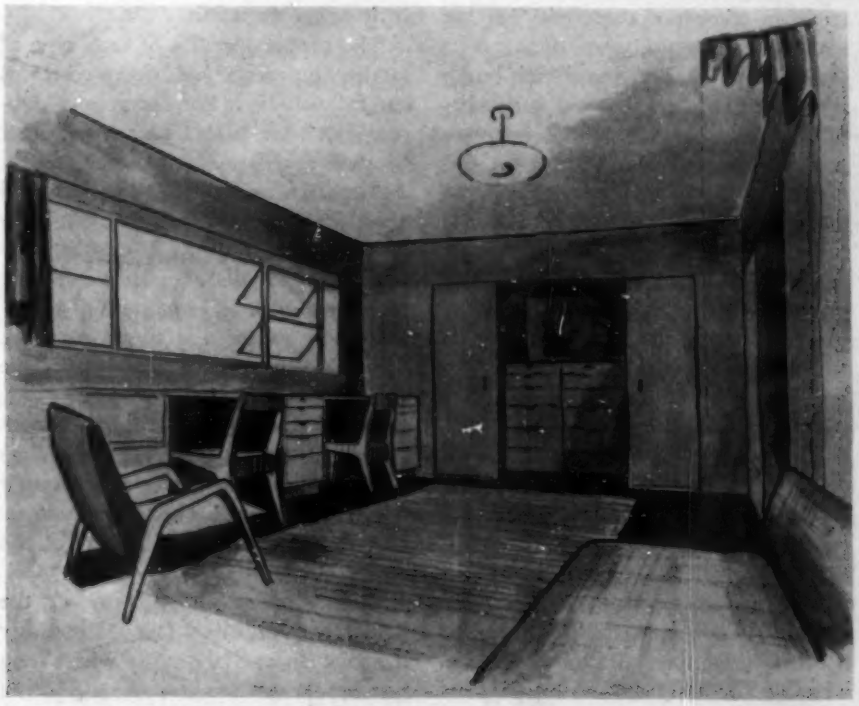
The main academic structures, such as classroom buildings, libraries and science laboratories, all require individual solutions. With the changing world conditions it is only natural for the architect to have to revise his thinking and to avoid standardized buildings for such purposes.

Large field houses, gymnasiums and football stadiums are given more consideration than are other types of structures upon the campus. This situation is generally due to an overemphasis upon athletic prowess as demanded by alumni groups. Such structures have to be of enormous size to accommodate large numbers of people and hence have a tendency to dwarf other portions of the campus.

In addition to athletic structures, there is usually a need for a large auditorium which can accommodate the greater part of the student body. Such a structure will probably be used only a limited time during the academic year and represents an investment out of proportion to the other campus buildings.

Housing facilities present many interesting problems to the architect. Dormitories for men and women, student club houses and dining halls all need to be given careful consideration. The kind and type of structures are influenced by the expenditure per student occupant. Large private universities in various parts of the country have erected magnificent buildings, many of which are too elegant for reproduction in state supported schools.

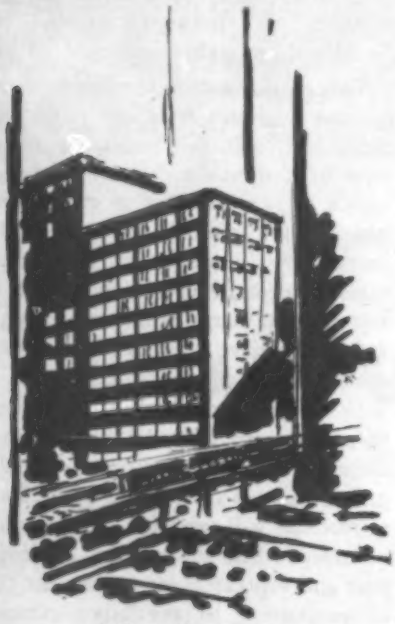
If a comprehensive study of existing college buildings could be made and the results published, members of the architectural profession would have available data to refer to in campus planning. Such data would be of great benefit also to administrative offices in the setting up of program requirements for new buildings. Some efforts along these lines have been attempted during the last twenty years but now are much out of date. Further research could add much to available knowledge. No field of human endeavor offers more interesting problems than that of developing fine educational structures.



Curtain may be drawn to divide study and sleeping sections in this functional dormitory room planned for Antioch College, Yellow Springs, Ohio. Saarinen and Swanson are the architects with Max G. Mercer as associate.

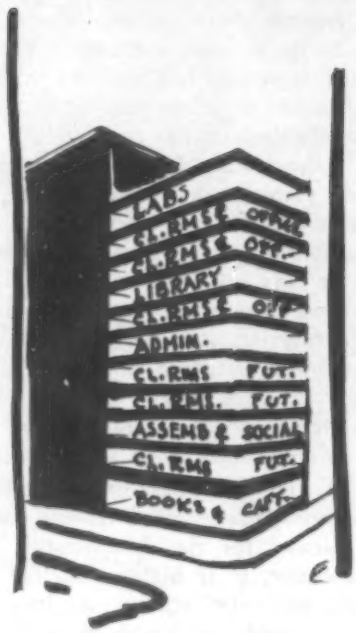
OFFICE BUILDING TO COLLEGE

LOWELL F. HUELSTER
Controller
Roosevelt College of Chicago



What they got

Perkins and Will, Architects



How they use it

CONVERTING AN OFFICE BUILDING, fully tenanted, into a college plant in less than two months, under the handicap of wartime conditions, is the challenging history of Roosevelt College of Chicago.

Founded in April 1945 out of a conflict over policies at Central Y.M.C.A. College, the new school purchased an 11 story office building in Chicago's Loop last July 13. With faculty hired and the catalog and fall class schedule ready, it was imperative that the plant be ready for operation by the middle of September.

Since there was no vacant space in the newly acquired building, the first task was the eviction of tenants. Lease cancellation notices on a 30 day basis were sent out by registered mail at once. Every effort was made to locate vacant space for the tenants and to assist them in moving at the earliest possible moment.

It was not until August 21, however, that a sufficiently large block of space could be acquired to permit remodeling and the installation of equipment to begin. Nevertheless, when school opened on September 24, 1300 students were accommodated in more than 200 class sections. Some classrooms were still undecorated and some facilities were not complete, but the major plant was in operation.

Before purchasing an existing building an investigation of the suitability of the structure for school purposes was necessary. We employed for this purpose an architect to determine that the building was fireproof and that it fulfilled legal requirements for its new use, as well as to establish the feasibility and expense of converting the structure physically. The advice of an attorney was sought in regard to the possibility of canceling leases. We were fortunate in this respect since almost all leases contained a 30 day cancellation clause.

The actual remodeling problem, of course, hinged upon the structural character of the building which was of typical steel frame construction. Steel columns, regularly spaced, ran the entire height of the building. All floors were of concrete and wall partitions could be removed or new ones added at any place. Because a multitude of small offices made up the former tenancy, our major problem was one of knocking out tile partitions in order to provide the relatively large spaces needed for class, laboratory and library purposes. While 90 separate tile partitions were removed, only five new partitions had to be erected. Careful attention was given to the location of faculty and administrative offices in existing space which would require little or no alteration.

The proper location of each type of facility in order to hold down costs was carefully studied. For example, all laboratories were placed on the top floor so that ventilation could be handled through the roof. This also eliminated objectionable odors from all other portions of the building. Moreover, concentration of all laboratories in one location permitted economies of installation; for example, a single gas pipe, carried up the elevator shaft, served the entire floor.

As the building had direct current service, arrangements were made to have an alternating current line brought into the building. This, too, was carried to the laboratories by way of the elevator shaft.

The most difficult problem was the installation of chemistry laboratory benches. In one laboratory where long benches were used, water, gas and drains were carried along the floor at the sides of the room to the steel columns in which all utilities are located.

In another laboratory using benches of the "island" type, it was necessary to cut through the concrete floor and carry all pipes and drains on the ceiling of the floor below.

The entire eighth floor was given over to the library. A large reading room was provided by knocking out corridor as well as room partitions.

In general, because of inadequate elevator facilities, classrooms were distributed insofar as possible over the lower floors. Small student lounges were opened on several floors in order to reduce student floor-to-floor movement. A bookstore and soda fountain room was installed and a checkroom provided as close to the street level as possible, again in order to eliminate unnecessary burdens upon the elevators.

Another question which had to be answered was that of providing an auditorium. The large number of steel columns, combined with the fact that each floor is served by a central corridor, made it impossible to provide a room of large seating capacity and acceptable plan. As a result, we have an auditorium with a seating capacity of less than 300 and much too long in relationship to its width.

Perhaps the most troublesome alterations were those made necessary by building and fire code regulations. For example, every classroom must have at least two exits. This requirement was satisfied in most instances by cutting a door opening through the common wall of each pair of adjacent classrooms. The local code requires also that classroom doors must swing out of the room, whereas all doors in office buildings are hung to swing into the room. The reversing and changing of all the doors constituted a costly and time-consuming task.

All of the foregoing changes were accomplished in less than two months' time. Since the utmost haste was necessary, we worked without formal architectural drawings, relying instead upon simple sketches which served to indicate the walls to be removed and new walls and openings needed. As there was not time to ask for bids, the entire job was handled by a general contractor upon a "cost plus" basis.

Now that our new college plant has been in operation for two semesters, it is possible to stand back and evaluate results.

From the standpoint of cost, certainly the conversion of an old building has proved economical. Because no fundamental structural alterations were required, the entire job of rearrangement of the interior was done for about $20,000. A new building, specifically designed and constructed for college purposes, and of the same capacity, would have cost in the present market some three to four times as much as our total investment. Even more important, a new building, if it could have been constructed at all, might have taken a year or more for its completion.

In fairness, however, it must be pointed out that a converted plant can rarely be an entirely satisfactory plant. For example, it has already been noted that our elevator capacity is inadequate. Moreover, it is not practical to install additional shafts for this purpose. In general, our stairways and corridors, ample in width for the light traffic of an office building, seem undesirably narrow and inadequate for the crowd of college students making hourly use of them.

Our classroom facilities, on the other hand, are attractive and efficient. We have a wide variety of rooms, varying in size from a capacity of 15 to as many as 100 students. The rooms are bright and well ventilated. In a city college, of course, the problem of street noises is always present. Much to our surprise, the rooms on the lower floors are quieter than those in the upper reaches of the building.

The problems of operation and maintenance of the plant have not been unusual. Fortunately, the building had been well maintained and so the cost of replacements and renewals has been normal. It is obvious, however, that there is a real danger at this point in purchasing and converting an old building.

On the basis of the experience of our institution, certain suggestions may be made for the benefit of college administrators who contemplate taking similar measures for the purpose of rapidly expanding their college plant.

1. Under present conditions, the conversion of an existing building is perhaps the best, the quickest and the cheapest method of expanding plant facilities.

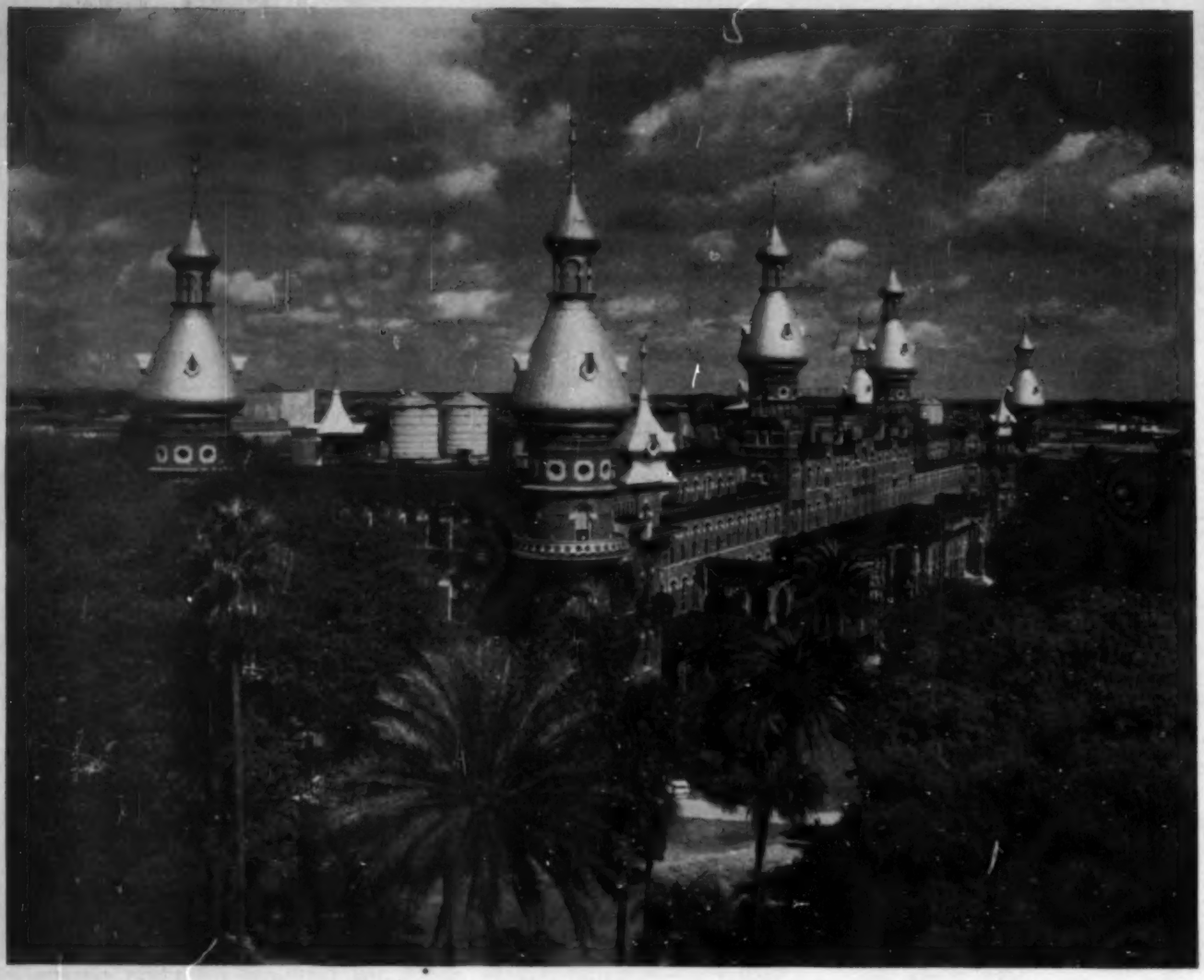
2. Before purchasing such a building, one must make certain, through the use of competent architects and attorneys, that conversion is physically and legally possible. In this connection, the location of supporting columns, bearing partitions and utility services is extremely important since these factors place limits upon the conversion plans in all instances where low cost is important.

3. If the building is occupied, the character of tenants' leases must be carefully investigated.

4. The location of classrooms, laboratories, offices, libraries and general student facilities relative to existing elevators, stairways, restrooms and other permanent installations demands detailed consideration, because the usefulness and efficiency of the building as well as the cost of conversion hinge largely upon this point. The location of classrooms relative to street noises, lighting and adjacent exposures also must be studied.

Roosevelt College provided itself with a modern, fireproof college plant at minimum cost and with maximum speed at a time when construction of new properties was impossible. This may be an answer to the problem of overcrowding in many American colleges; it may be one method of taking care of the flood of veterans now demanding an education.

Making it happen



By EVA BYRON
for University of Tampa

HOTEL TO UNIVERSITY

Shining minarets at Tampa once reflected the gaiety and luxury of a world at play; today they symbolize the scholarship and planning of a mecca of learning

ON THE BANKS OF THE HILLSborough River in Florida, in a setting of palms, ancient live oaks and colorful tropical shrubs and flowers, is a unique university. Not that the University of Tampa differs greatly from other universities academically; rather it is the building that is unique.

Tampa's university was founded in 1931 to meet the educational needs of the urban area and the growing west coast region of Florida. It was not until 1933 that the school moved into its present home, the once famous Tampa Bay Hotel, known in Spanish-American War days as one of the modern wonders of the world.

Built by Henry B. Plant, railroad and steamship magnate, at a cost of $3,000,000, the former hotel is a fine example of Spanish Moroccan architecture. In it James Wood, the architect, created the atmosphere of the old Moorish palaces of Spain.

The massive red brick building, five stories high, is 1200 feet long and the walk around the outside walls is exactly one mile. Thirteen gilded minarets, each surmounted by a gilt crescent, are silhouetted against the blue of the Florida sky. These, together with wide verandas, arches and balconies supported by granite columns and innumerable smaller decorative features, give the structure an exotic air.

As more modern hotels appeared on the scene, however, the Tampa Bay gradually became outmoded. After the death of Mr. Plant, his heirs deeded the property to the city of Tampa for $125,000. This was in 1905, and the city continued to operate it as a first-class hotel for many years.

By 1933 the building had become a white elephant and the city decided to donate it to the then struggling 2 year old University of Tampa.

Surprisingly, the structure was easily adapted to the uses of a university. In the beginning little was done in the way of interior renovations and repairs. The school simply moved in, and the trustees and staff gave the major portion of their time to establishing the university on a firm academic basis. In this they succeeded as shown by the fact that student enrollment increased from the initial attendance of 62 in the first academic year to a registration of more than 500 for the fall semester of the year marking the United States' entry into World War II.

FUNDS ARE RAISED

In June 1945 Dr. Ellwood C. Nance assumed the presidency of the University of Tampa and started a campaign for $50,000 to improve and repair the building and to add equipment. Since the University of Tampa is a private, nonprofit, nonsectarian institution, it is supported entirely by liberal trustees, friends in the community, students and faculty. President Nance determined greatly to enlarge this circle of supporters.

He sent out letters to the alumni, publicized his campaign in the local newspapers and on the radio, made speeches up and down the Florida west coast, and the money began to come in. Various organizations sponsored benefit shows, dances, football games and other activities. Women's clubs took on the furnishing of certain rooms. Finally, the men's clubs of Tampa boosted the campaign over the top. By October, the original goal of $50,000 had been surpassed, and the repair work was well under way.

Today the transformation of the famous old building is almost complete. Given a fresh coat of aluminum paint, the domes and minarets glitter once again as in the time when the hotel was in its heyday. New paint has brightened verandas, balconies and archways, too, and the old Spanish castle seems to have taken a new lease on life.

On the inside, Ida King Batey, interior decorator, has done a fine job of lightening and brightening halls and rooms. The walls have been done over in pastel tints, the floors sanded and varnished. The once dazzling chandeliers have been replaced by fluorescent lighting fixtures and the faded window draperies, by gleaming white venetian blinds.

MURALS DEPICT HISTORY

The huge rotunda, 78 feet square and 30 feet high, continues to serve as a lobby. In the corner that formerly was the hotel front office are the information desk and telephone switchboard; modern lounge chairs and tables are scattered throughout the room. On the walls a series of murals, painted by Norman Borchardt, art director, depicts the history of Tampa and the university, from the time when the Indians lived there, through the landing of Hernando De Soto, the building of the Tampa Bay Hotel, the advent of Theodore Roosevelt and his Rough Riders and the conversion of the hotel into a university.

The great ballroom, scene of glittering gatherings in the Nineties, is now a student recreation center. It is furnished with attractive chairs and tables where soft drinks and sandwiches are served. Instead of the soft strains of minuets and polkas played by a sedate group of musicians, the room now echoes to the music of Harry James pouring out of a juke box.

The fastidiously furnished "ladies' parlor" is now the assembly room, equipped with a speaker's table and 450 straight chairs. Here, also, campus dances are held, for the chairs are removable. The room is circular, with many large windows opening onto one of the wide verandas, and in the summer the veranda, too, is used for dancing.

The great hotel dining room is now a library filled with 50,000 volumes; the old kitchens are used as laboratories. The erstwhile writing room is a beautifully furnished reception room known as the Marjorie Kinnan Rawlings room, its walls decorated with murals showing scenes from "The Yearling," Mrs. Rawlings' best known book.

All of these rooms are on the first floor, as are also the administration offices, which were once elaborate suites. The rooms that now serve as the president's offices formerly comprised the bridal suite.

Each of the thirteen minarets contains from eight to ten circular rooms, one above the other; these are used as special quarters for campus fraternities and sororities.

On the second floor are the university classrooms. Other guest rooms on the third floor have been converted into the girls' dormitory, recently remodeled and refurnished in pastel tints.

The south wing of the fourth floor and all of the fifth floor comprise the men's dormitory. The remainder of the fourth floor has recently been converted into a dormitory for married veterans and their wives.

Altogether, girls', men's and married veterans' dormitories house 350 students.

"MUSEUM" HOUSES ANTIQUES

And what has become of the elegant furnishings of the old Tampa Bay Hotel? For the most part, they belong to the city of Tampa and have been gathered into the south wing of the university's first floor. Separated from the rest of the building by an iron grille and gate, this area is known as the "museum." It has an outside entrance, and a caretaker keeps it open to the public. Here are housed the antiques, paintings and sculpture that once helped to make the hotel famous.

At present President Nance is turning most of his energies toward veterans' problems. In the recently converted dormitories a married veteran and his wife, provided she enrolls as a student also, may live at small cost. Plans are being made for the establishment of a cooperative cafeteria which would enable these couples to keep their living expenses at the minimum.

Now, with the building renovated and the program for veterans well under way, Dr. Nance is beginning to make plans for raising a $1,000,000 endowment fund.

When family style service was discontinued in Notre Dame's dining halls during the wartime emergency, a tradition was broken. As it prepares for a peacetime emergency, however, the university finds that the change to cafeteria service was an advantageous one

CAFETERIA OR FAMILY STYLE?

DAVID FORD
Managing Director, University Dining Halls
University of Notre Dame

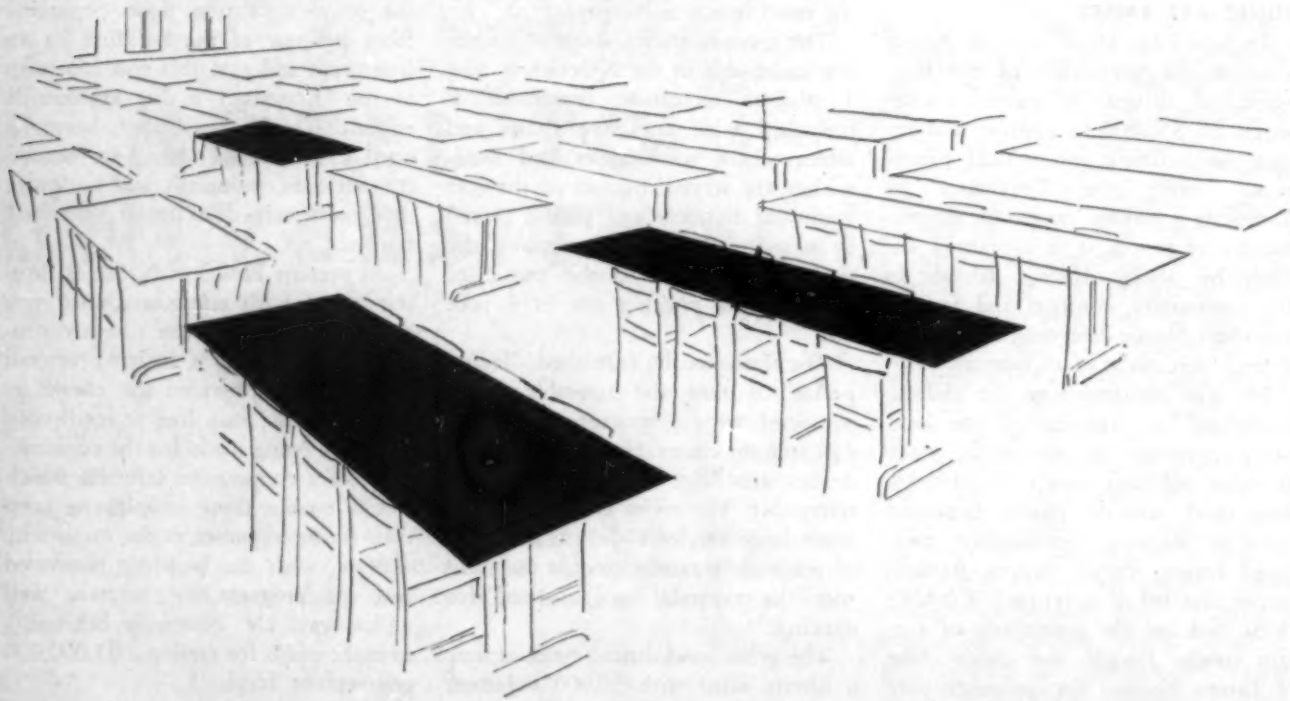
IN PREWAR DAYS 3000 STUDENTS AT the University of Notre Dame were fed family style by student waiters in the dining halls building. This structure, 232 by 206 feet, is in three sections: the far center of the ground floor is devoted to the kitchen; in front of this, toward the main entrance, is the cafeteria, and directly inside the main entrance is a reception hall with Gothic ceiling extending across the entire center section.

At each end of the reception hall are entrances to the cafeteria; there are two duplicate dining halls, one on either side of the building on the main floor.

Each dining hall is 206 feet long, 62 feet wide and has a 30 foot ceiling. At one end is a dais with a cloth-laid table at which the Fathers sit, facing the room. The floor is terrazzo; walls are wainscoted with paneled oak to a height of 8 feet and above the wainscot is plaster. The ceiling is beamed, and the surface between the beams is covered with a soundproofing material.

Oak tables for students are arranged in rows with geometrical precision, lengthwise and crosswise of the room. Made to order, each table is 12 feet long, 32 inches wide, with 2 inch solid top, and is of the take down type. There are 12 chairs to a table, six to each side. No tablecloths are used for the students' tables, the tops being treated with a hard plastic varnish impervious to heat or food acids.

When service was family style, the tables were set as completely as possible before meal hours. Condiments and sugar were left on all the time. At each place were a linen napkin, knife, fork, spoon, glass, cup and saucer and the dessert for that day; in addition,



there were two silver platters holding four kinds of bread, two dishes of butter in pats on shaved ice, a pitcher of milk and a pitcher of water.

Five minutes before mealtime, the doors were opened and the students came in, each taking his regular place at table and standing at his chair. At the designated meal hour a bell signal called all to attention, a priest said grace and all sat down. Fifty student waiters assigned to each hall then brought in the food in silver containers. In thirty minutes the meal was over and at a bell tap all arose, a priest gave thanks and all filed out of the dining hall.

Student waiters were then served their meals by students who had been served at the designated mealtime. Food was unlimited, second, even third helpings being permissible. Student waiters took care of bussing all dishes to the kitchen and of cleaning up tables and chairs.

In the spring of 1942, the U. S. Navy began sending trainees to Notre Dame, and it was not long before 90 per cent of our students had become naval trainees. We were one of the first schools in the country to become a U. S. Naval Midshipmen School. For several years Notre Dame had a Naval Reserve Officers Training School, and later the young men merely were put in uniform and continued in school. The navy next added V-12 and some V-5 trainees until finally we had a total of 4000 students.

Naturally, our dining hall facilities became overtaxed and it was necessary to make changes. We removed one row of tables the length of each dining hall and installed a cafeteria system. This gave us four cafeteria stations in each hall, or eight in all. We then adopted the regulation navy partitioned tray, eliminating all china except soup bowls and mugs for hot drinks. The trainees bussed their dirty trays and silver at one of several stations in each dining hall, separating the silver, trays and refuse. This type of service was an innovation and lowered our food and operating costs perceptibly. It was the only way in which we could have fed this number of students with our facilities in the time required, sixty minutes per meal. This time limitation was necessary to keep pace with the navy's accelerated physical and scholastic program.

After V-J Day, as the navy started to retract the trainee program and as more and more civilian students returned, it became apparent that changes in the method of feeding were necessary. Returning servicemen naturally are resentful of regimentation and they want to get away from any memories of army or navy mess. They also want to return to some semblance of home atmosphere.

All college and university facilities are at present overtaxed because of returning veterans; ours is no exception. This situation no doubt will prevail for several years. With our present and contemplated enrollment, it is necessary to continue cafeteria style service. We have returned to the use of china and do not require the students to do any bussing of dishes when they have finished eating. Clearing of tables is done by student employes.

The students seem to like this service as it gives them more freedom, for they now have one hour in which to obtain any meal and they can be seated with anyone of their choice. They can and do change meal companions frequently.

Our experience with both cafeteria and family style services has definitely decided us in favor of the former for the following reasons:

1. *Increases capacity with the same seating because of the speeding up of service.* Two hundred can be fed at one station in from twelve to twenty minutes, depending upon the type of meal.

2. *Considerably reduces food and operating costs.* Greater numbers of people can be fed with the same kitchen crew. This service allows flexibility in controlling portion size, thereby making possible savings in food costs.

3. *Reduces waste materially.* In family style service, food is always left over on the tables and most of it is a total waste. Such waste is entirely eliminated in cafeteria style service.

4. *Lowers breakage.* This type of service permits fewer dishes to be used and they are carried on a standard 15 by 18 inch individual tray.

5. *Preserves desirable temperatures of food.* In the case of hot foods this tends to preserve vitamin content. The proper food temperatures are maintained on cafeteria stations and the time element is lower between the service and the consumption of foods as compared with family style service.

6. *Enables students to eat with companions of their choice.* In family style service it is necessary to assign students to regular seats for all meals. This is a form of regimentation which often is resented; furthermore, it does not give students an opportunity to mix and become well acquainted with one another.

7. *Permits psychological appeal.* Food can be set out attractively. Color combinations lend enticement to the appetite.

With present scarcity of food supplies and with ever increasing food and operating costs confronting us all, it is needless to go into detail on the necessity of our operating as economically as possible. Our experience definitely has proved the many advantages of cafeteria style service.

WHERE shall we buy?

CHARLES W. HAYES
Supervisor of Purchases
Emory University
Emory University, Ga.

INSTITUTIONS OF HIGHER EDUCATION are big businesses today. With the end of the war, a rapid expansion program began to develop. Our dormitory and classroom walls are even now bulging, crowding is increasing and the accelerated program of instruction will probably remain in effect for many years until the students participating in the program of higher education

guaranteed them under the G.I. Bill of Rights are processed.

Millions of dollars will be expended in the next ten years in deferred maintenance and in additions and replacements for laboratory, classroom, dormitory and office equipment. Additional millions will be funneled into new buildings.

During the war years heavy capital expenditures such as the foregoing could not be made because of material and manpower shortages. Our present demands are now such, however, that we *must* engage in a huge expansion and renovation program even though costs for buildings and equipment have increased from 30 to 50 per cent above prewar levels.

A discussion of whether to purchase at home or abroad, that is, whether procurement emphasis should be centered in local or national markets at this time is almost an academic subject. Every university procurement officer is now tearing his hair in the attempt to obtain equipment and supplies *anywhere*.

Those of us who are procurement officers worked through the war years looking forward to the dawn of peace to ease our burdens. Early in the war we saw more and more commodities becoming unobtainable. We slaved over catalogs and trade journals seeking substitutes, and we spent endless hours convincing our faculties that they must use the substitutes or do without. We became experts on priorities, filing hundreds of PD-1A's, PD-3A's and W.P.B.-541's.

To most of us there came the never-to-be-forgotten experience of being suddenly informed one day that we must find feeding and housing space and equipment to care for from 300 to 3000 Army Specialized Training Program or Navy trainees. At about the same time our instructional staffs began to pour in from three to 10 page requisitions for additional scientific equipment and supplies required for these programs. I have talked to many educational buyers and have never found one of them who had more than four weeks to prepare for these programs.

During the early phases of the military training programs, too, we had no information as to who would pay for what. We usually contracted for the equipment and supplies, fought for priorities, received the trainees, activated and negotiated the contracts and later renegotiated them.

Many university business officers lost years of their lives during those months. We grimly buckled down to the job, we burned the midnight oil, we spent hundreds of dollars on long distance telephone calls and telegrams, we cajoled salesmen and War Production Board personnel and our own instructional staffs, and, by dreaming of peace and a return to normal procurement practices, we somehow managed to survive.

But what is our situation now? Actually we find our files filled with more incompleted and partially filled orders than ever before. We find requisitions by the hundreds for typewriters, filing cabinets, desks, centrifuges and miscroscopes to meet deferred needs and to take care of the returning professor and his students. We find most of our teachers convinced that the war is over, and they see no reason why equipment and supplies should not be obtainable on a moment's notice.

In all fairness to the professors it *is* hard for them to understand why we cannot wave a wand and produce a new typewriter or desk. They are not in intimate daily contact with a situtation which may iron out eventually but which now is chaotic indeed.

The foregoing summary is given to explain why procurement officers are looking for materials locally *and* nationally, wherever they may be found. We have been victims of the seller's market for six years; we may expect two or three years more to pass before a buyer's market again emerges.

In normal times there is considerable pressure brought upon the university procurement officer to buy locally. If his institution is tax supported, he is reminded of that fact. If it is a private institution, he is reminded of past endowment gifts and probable solicitations by his school for future gifts. Of course the procurement officer is well aware of these considerations, but he can still see no reason to pay excessively for commodities merely in order to buy locally. There are other factors even more vital than the two most often mentioned by sellers and these tend to make the purchasing agent a patron of local trade marts. These factors may be briefly enumerated as follows:

1. The purchasing agent is interested in rapid deliveries.

2. He is interested in obtaining quickly information from the seller.

3. He is interested in on-the-spot service for breakdown and repair parts.

4. He is interested in adequate local inventories of commonly used items to meet the inevitable emergency needs.

5. He is interested in making personal contacts with vendors and inspecting their manufacturing and merchandising potentialities.

6. He is fully aware of the fact that his institution is a vital part of the local community and that the progress and welfare of either the institution or the community will inevitably depend upon the health of the other partner.

These considerations obviously predispose a university purchasing agent to survey his local resources before journeying afar to spend his school's dollars.

He is under just as definite an obligation, however, to spend the funds with which he is entrusted to the best advantage of his institution. His success is contingent upon obtaining the most value for the funds disbursed. He would be derelict in his duty if he uncritically accepted local quotations without continually checking national markets.

Businesses survive only by meeting competition. Schools that foolishly waste money through lazy procurement practices do not deserve to have such wasted funds poured back into their treasuries either by taxes or by gifts.

We argue only for efficient purchasing practices. Most of our trade is with jobbers. If our local jobbers require an excessive markup on the volume we buy, we should seek out-of-town or out-of-state quotations. To fail to do so is inexcusable.

The purchasing agent should honestly state his convictions to complaining vendors. The latter often are willing to meet competition. I am not here suggesting the obtaining of an out-of-state bid merely to beat down local prices; I suggest, rather, a candid review of the price and quality situation as it affects the commodity under discussion, with a frank statement as to the percentage of savings which are made in getting the product elsewhere. The local vendor may or may not be willing to offer a relatively equal price advantage. To choose is his privilege, but to select the best source of supply for his school is the inescapable duty of the procurement officer.

Combinations of raw materials, cheap power, skilled manpower and transportation facilities have set a pattern of manufacturing concentration. Some industries, on both the producing and the distributing levels, have grown too large. An efficient small business can often give more economy in selling and usually better service. We must be aware of this factor in setting the pattern of procurement practices. Occasionally our demands will add to a local enterprise just enough volume to make it efficient and competitive. It is our obligation to search out sources of this character and to develop contracts to the mutual advantage of the school and the supplier.

This subject of institutional purchasing as it relates to the local community has by no means been exhausted here. Each of us has faced the problem and will continue to face it. We are obligated to purchase economically, and work in developing local sources may often promote economy and better service in the end.

WHEN to buy locally

M. E. WITMER
Business Manager, Taylor University
Upland, Ind.

THE PURCHASING OFFICER OF THE college located in the smaller community is more likely to have close personal contacts with the various business establishments near him than does the officer in the larger community.

Thus the failure on the part of the college in the small community to patronize local sources of supply as much as these sources feel they deserve can more easily bring about a situation creating criticism and strained public relations.

This problem is a serious one for a considerable number of colleges. Recently I made a survey of a number of representative colleges located in smaller communities in the Midwest. One of the questions asked was, "Do you ever receive any criticism from local merchants because they feel that you do not patronize local trade sources sufficiently?"

Half of those answering replied in the affirmative. Those answering "Yes" were asked to state whether they felt such criticism was of sufficient importance to create a more or less serious problem in public relations. Again those answering were evenly divided in their opinion.

In the same survey, replies were requested to the question, "What percentage (estimated) of the following requirements do you purchase in your local community: (a) perishable food stuffs; (b) staple food stuffs; (c) plant maintenance and operating supplies, and (d) office supplies?"

There was a wide variation in the answers to this query. The percentages for (a) ranged from 5 to 100 per cent; for (b) from 2 to 100 per cent; for (c) from 5 to 100 per cent, and for (d) from zero to 100 per cent. The factors to be weighed with respect to items of various kinds, therefore, vary greatly from one institution to another.

The great majority of colleges located in smaller communities are privately owned rather than tax supported and are relatively small in size. For these institutions there is a distinct financial factor which is often decisive. In ordinary times, it is necessary to obtain the utmost value from every dollar expended for operating expense; in these times of the cheapened dollar, it is doubly necessary.

Nevertheless, there are many times when the college is plainly justified in paying a slightly higher price for an article purchased through local sources in order to build local good will. The majority of those replying to the survey indicated that they felt they were sometimes justified in purchasing locally even at a somewhat higher price in order to retain or to build good will.

Another fairly important factor that makes for difficulty in retaining local good will is the somewhat provincial attitude of many business men in the smaller communities; they fail to see the broad play of economic forces. If they do not receive what they feel is a large amount of trade from in-

stitutional sources, they immediately conclude that the college is spending all of its money elsewhere. The fact, too, that the college usually is almost entirely exempt from local taxation is frequently seized upon as a pretext for criticism in this connection.

What most local merchants do not seem to realize is that the greater part of the income of the average institution in the smaller community comes from outside the community and, therefore, that the community has lost nothing if the college elects to do most of its purchasing from other sources.

A pertinent point was evidenced by one of the purchasing officers answering the questionnaire used in the survey: "Inasmuch as our college is supported by the —— Church, we feel that we are not bound to cater to the local people. Our contributions amount to about 50 per cent of our income; therefore, we feel that we can buy where we please." The same college estimates, however, that it purchases 100 per cent of its perishable foodstuffs and 75 per cent of its plant operating supplies from local sources. The point seems to be that by reason of its source of income, it reserves to itself complete freedom as to sources of purchases without regard to local good will.

When a local community is contributing substantially either through student attendance or through contributions toward operating expense, however, the college should and probably would rightfully feel that it is under a distinct obligation to see that a substantial amount of its expenditures is made at home No doubt there have been a few instances in which college officials have made ill-advised statements as to the large amount of money their schools bring into a community in order to sell the community on the worth of the school as a local asset. Such statements invariably backfire and in the end do more harm than good when not entirely supported by the facts.

It is clear, I think, that the solution to a serious question of local public relations lies in a campaign of education through better public relations. One purchasing officer, for instance, has indicated that he has informed local business men that he will *always* buy at home when the price is as low or only a small amount higher than outside prices and has found this accepted as a fair policy. Emphasis should be placed also on the factors which necessitate the purchase of many items through outside sources. For instance, it is doubtful whether any college in a small community finds it possible to purchase departmental educational supplies locally. Such items constitute a considerable item in the ordinary budget.

Since faculty members and other employes are in a strategic position to build or destroy good will for their college, it is important that they be encouraged to purchase at home for their personal needs, provided, of course, that the college itself has a sound and justifiable policy in this respect.

At present when we are still in a seller's market, the problem of maintaining local good will through wise fiscal as well as public relations policies may not be important. The average merchant has more demand for his merchandise than he can supply and, therefore, may not concern himself particularly in the matter of retaining local business. However, when the time that supply and demand are more nearly into balance inevitably arrives, he will no doubt begin to think more seriously about this problem.

Colleges would do well to take stock now and see whether their policies in this respect are what they should be; it is altogether possible that some institutions may be laboring under the delusion that they have no problem when the fact may be that it is simply smoldering under the surface and has never come forcibly to the attention of those whose concern it should be.

These observations are intended by no means to be a careful or complete analysis of the subject but to stimulate the thinking of fellow business officers and to suggest the wisdom of a careful review of their local situations.

"YOUR MONEY, YOUR UNIVERSITY"

Recognizing that most institutional financial reports are written not only by accountants but for accountants rather than for the general public, Comptroller Lloyd Morey of the University of Illinois this year issued, in addition to his regular complete annual report, a 16 page report planned specifically for the public. He titled it "Your Money, Your University." The subtitle is "The Story of the Financial Operation of the University of Illinois for the Year 1944-45."

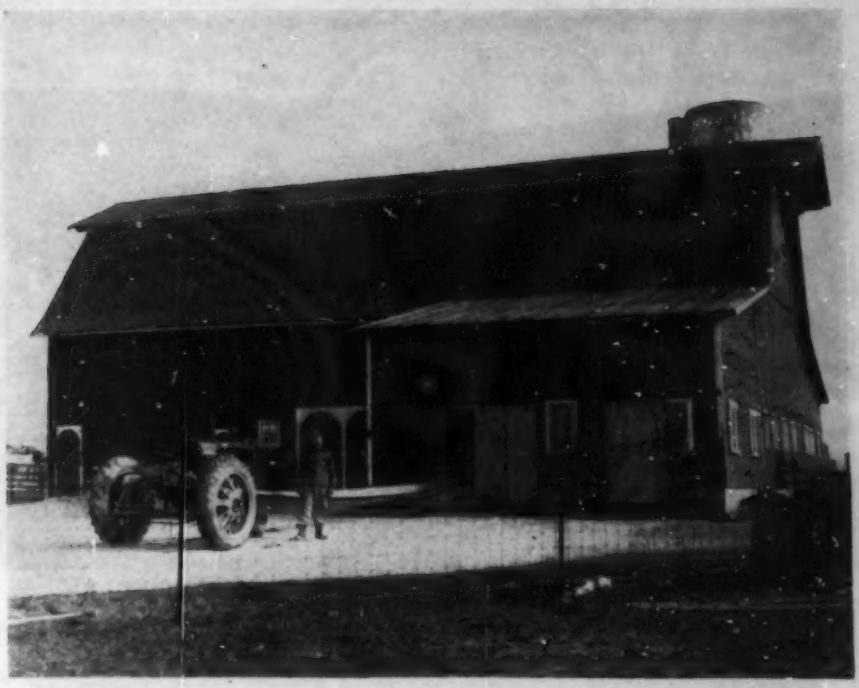
It is a report to the citizens of Illinois in language they can understand. It points out that the average Illinois family paid 1 cent a day for support of the university and has an investment of $23.84 in the university's $47,000,000 plant.

Comptroller Morey's booklet is understandable by anyone who can read a newspaper. It tells where the university received funds, in addition to the taxes which provided 1 cent a day from every Illinois family; what the major sources of expense were; what the university's plant includes and its value, and what the family receives.

"The average student who is a resident of Illinois pays tuition and other fees totaling about $100 for the regular two-semester academic year. For every dollar he pays, the university expends, on the average, at least $3 in addition," says the booklet.

THE EDUCATIONAL OPERATING DOLLAR 1944-1945

Where it came from | What it was spent for | How it was spent



OPERATING COLLEGE FARMS PROFITABLY

D. J. HORNBERGER
Treasurer
Ohio Wesleyan University

ECONOMIC CONDITIONS IN 1933 marked a turning point in the handling of college and university investments. At Ohio Wesleyan University a large part of our current assets was frozen in a bank which failed to open after the bank holiday, so ways had to be found at once to conserve cash wherever possible.

At that time the university had some 12 farms. Obtained either through gift or through foreclosure, they had a book value of $254,000, but the earning capacity was close to the vanishing point. With four of them located close to the campus and the rest scattered throughout the state, their proper handling created a difficult problem.

As business was at a standstill, we scoured all farms for animals to slaughter for use in the dormitories. This emergency operation developed the idea of using our farm properties for the regular production of meat, eggs and milk.

Our first experiment was the starting of a dairy herd on a 270 acre farm 12 miles from the dormitories. A second property of 130 acres, just a mile from the first farm, was soon converted to handle all calves and dry cows. A total of 400 acres was thus provided for the dairy project.

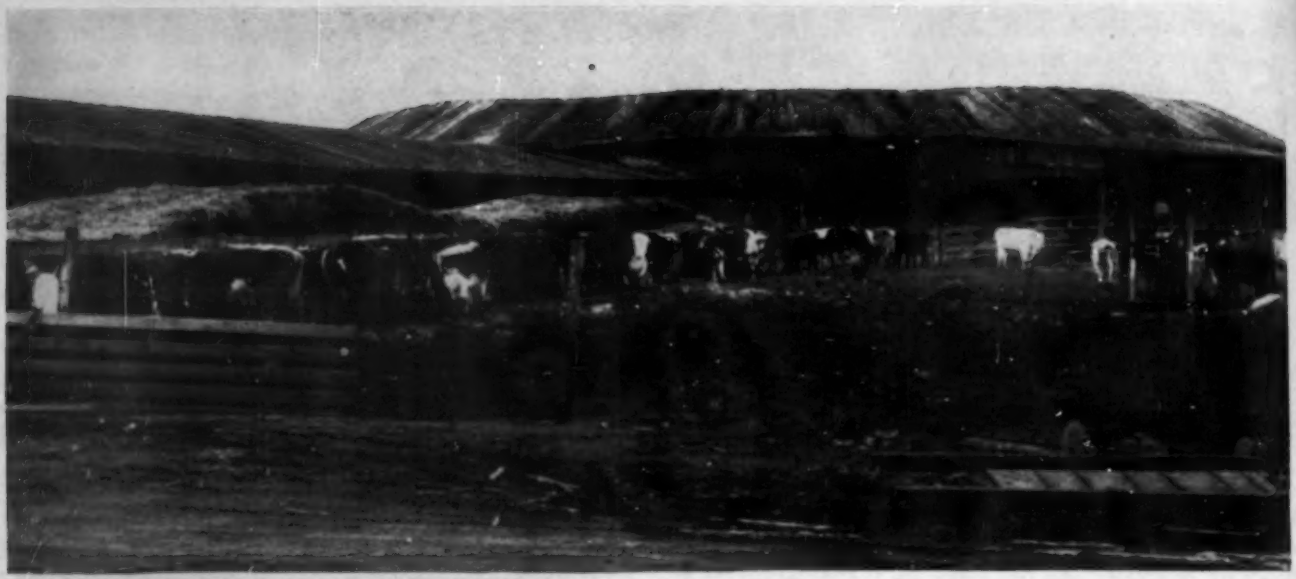
The main barns were equipped for the production of grade A milk, with all operations electrified. A basic herd was then purchased and from this our present herd developed. As the heifers prove themselves, the older cows are sold; in this way the herd has been steadily improved.

The dairy farm now supplies more than 90 per cent of all milk and cream used at the dormitories. The cost is considerably less than the purchase price of the same product locally but the return on the farm is excellent. Most of the feed is produced on the two farms; the remainder, except for concentrates, comes from other grain farms in the vicinity which are owned and operated by the college.

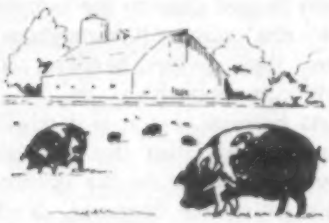
The same types of operations have been set up on other properties. Six miles from the dormitories the university had a 75 acre property with an excellent house, a large hen house, a fair barn, granary and shed. The barn has been converted to a double deck laying house, a second laying house has been erected and the shed has been converted into a brooder house. Day old chicks are purchased from a reliable hatchery. These are placed in small shelters on new ground each year after coming from the electric brooders. The friers are either killed for dormitory use or sold, as conditions make it advisable. The pullets are carefully culled and placed in the laying houses prior to production. This operation now produces a large proportion of the chickens used in the dormitories and more than 50 per cent of all eggs consumed.

This property is one of the best paying farms and has been steadily improving in its earning power. Originally stocked with Leghorns, we are now experimenting with heavier breeds in order to increase the meat advantage, and we hope to switch in the next few years to heavy breeds entirely if egg production can be maintained.

In 1938 the college was given a 2400 acre property some 65 miles from the campus and in one of the best farming areas in the state. About half of it was under cultivation, the other half being bluegrass pasture with streams running through it. Spring fed, these streams neither dry up in the summer nor freeze in the winter, which makes an ideal setup for cattle. This plot originally consisted of eight individual farms, but the property had one large circular feeding barn with a 200 by 60 foot shed. Fields were small, badly cut up



Above: Large circular feeding barn which has a 200 by 60 foot shed. Left: Part of the dairy herd that supplies 90 per cent of all milk and cream used at the dormitories. Bottom: Part of the normal load of 800 to 1000 head of cattle which are fed on the 2400 acre property.



and had been heavily farmed. Drainage tiles were clogged. The fields have been enlarged (up to 120 acres), fences have been rearranged and the whole property has been electrified. The over-all operation has been planned to reduce labor cost wherever possible, and machine operations are used to the utmost.

At first we purchased feeding cattle in Kansas City and Chicago. Later, a herd of 84 cows with calves at their sides was purchased, and today the farm has about 200 Hereford cows which act as a base of the operation. From 800 to 1000 head of cows, calves and steers is the normal load.

The property is located 4 miles from a commercial cannery which cans peas and sweet corn grown in the surrounding territory. The pea vines, cobs, husks and ends discarded by the factory make excellent silage and the college contracts for all this waste for the hauling. From 2500 to 4000 tons of this feed are hauled to the farm each year. After experimentation it was found this silage could be stacked in the open with little loss. As a result three stacks are built each year, one at each of the feeding barns which are surrounded with cement runways for the steers to stand on when feeding. This plan permits feeding out of the mud and provides a minimum of silage handling.

Corn is picked with mechanical pickers except for one field close to the main barn where it is cut by machine, shocked and fed in the shock. After harvest the cattle and hogs are turned into all fields to clean up in line with the idea of keeping labor at a minimum.

A 15,000 bushel corn crib with a 12 foot driveway through the center has been built for corn storage. The corn is lifted through the use of elevators run by tractors, as are all baled hay and straw.

Hay is baled by pick-up balers to each of which is hitched a low bed wagon; all are mounted on rubber. The bales are loaded direct from baler to wagon and then are elevated by electric power to the overhead storage in the large barn or to the lofts in the smaller units. All grinding is done on the premises by electric or tractor power.

This 2400 acre farm supplies from four to six head of cattle weekly to the dormitories. Cattle are trucked to the packing plant by the farm truck, slaughtered, cooled and inspected and then delivered to the dormitories by the packer when his truck makes its regular run. The college dietitian is thus assured of a steady flow of beef throughout the college year.

In addition, cattle and hogs are sold on the market as the supply exceeds the college demand. Lambs, too, are slaughtered as needed. Because of the inability of the college to prevent too large a proportion of waste in using its own products, all pork is sold. Pork purchased is in cuts rather than carcasses.

Each year the income from this property increases. The drainage has been corrected, the fields have been limed and, with the large quantities of manure available, the productivity is continually improving. Although the operation is a little too far from the campus, it promises to become the best operation of all because of its size, economy of machine operation, cheap silage and excellent pasture.

Prior to the war, feeder pigs were purchased in Kentucky; few pigs were farrowed on the farms. However, after 1941 we went into the pig business. An 800 acre farm left the university by a donor has been made into a corn-and-hog operation and is now in its third year.

Each month from 20 to 22 sows are put through the farrowing house, which has its own water supply. Hot water is supplied by a large tank heated by coal. In a washroom each sow is thoroughly scrubbed and disinfected before being placed in the pen. When two to three weeks old, the pigs are treated and placed in a specially built shed, transported to fresh fields (alfalfa or sweet clover) and placed in individual houses. Here they are raised until weaned, then trucked to the other farms for fattening. This practice provides all feeder pigs needed. Grains other than corn and oats produced on this property are sold or transported to other operations.

Garbage from the dormitories where 900 students are fed is utilized on a 300 acre farm 3 miles from the campus. The garbage is collected three times weekly and feeding is done in a large barn on a concrete floor which is flushed out periodically with hot water and steam; when weather permits, feeding is done in the open fields. All fattened hogs are auctioned at Columbus, 24 miles distant.

Upon visiting our farms most business managers ask the effect on dormitory costs. If prices shift on the market, the dietitian takes advantage of the change. Occasionally (though not during the war years) it has been possible to purchase meat and eggs from supply houses at advantageous prices. If we can sell and buy on the market advantageously, we do it, but usually the opposite occurs. With the scarcity of beef, milk, eggs and chickens during the past few years, the farms have been able to supply at an advantage. The farms have to pay their way and the dormitories must do the same.

Under normal conditions, however, we obtain better prices, better quality and better service through control of at least a large part of such foods used. It requires constant supervision and the maximum cooperation of the dietitian, the business office and the farm manager for profitable operation.

Power from tractors runs the elevators which lift corn, baled hay and straw to overhead storage. Grinding is done by tractor or electric power.

J. W. LENTZ
Specialist in Lawn Care

WHAT SCHOOL OR COLLEGE HAS NOT made use of inspiring campus scenes in catalogs, alumni magazines and publicity folders! Fine buildings provided by public or private funds cannot be set off at their best advantage unless surrounded by the proper landscaping. Campus lawns are a vital part of that landscaping.

We do not do justice to college lawns to mention them only in connection with their pictorial value. More difficult to measure and of greater importance is the fact that a grand spread of clean, verdant turf provides a restful atmosphere, conducive to study and concentration.

A beautiful lawn has become a necessary asset to colleges and universities. Its presence and condition are a measure of the training in civic pride their students are receiving. Fine campus lawns make a good, though perhaps subconscious, impression on the student during one of the most formative periods of his life. The campus is an important part of the student's "home" during the major part of a four year period.

College and university lawns actually serve a functional purpose in addition to the beautifying rôle they play along with the other landscape planting. Solidly knit turf reduces work on the properties for which the buildings and grounds superintendent is responsible. Too, grass fills in and connects other landscaping features. It provides a natural approach and background for school structures and for campus activities just as graceful trees so many times provide a natural frame for a pastoral setting.

The usable qualities of lawn areas have not been fully explored at many colleges and universities. The "Please Keep Off the Grass" signs that dot many campuses could well be replaced with a few "Kindly Use This Lawn" invitations. This approach had remarkable results during the war at a hospital for convalescent veterans. It encouraged the men to take their reading, handcrafts and games out on the surrounding lawns. The fact that they were asked to use the turf made them more appreciative of it.

Since school grounds and park areas are such an important investment for the health and safety of the students, they deserve a proportionate share of the maintenance budget. Campus lawns need not be turf areas requiring expensive weeding and "manicuring." School lawns can be kept uniform, freshly green and neat without exorbitant expense. The asset of a fine campus lawn is worth many times the necessary maintenance cost.

The management of large lawn areas is made easier when the principles of good turf care are well understood. These principles can be summarized under four main points: (1) regular feeding, (2) high mowing, (3) correct watering and (4) timely repairing.

• REGULAR FEEDING. The first principle of good turf management is to supply the grass with a specific fertilizer at regular intervals. This practice replenishes nourishment constantly removed by the extensive root system of a vigorously growing, closely knit sod.

Early spring and early fall are the two best seasons for feeding lawns. By the time the fertilizer becomes available to the grass, the turf is entering a period of active growth and can best utilize this new supply of nourishment. The practice of reseeding lawns is minimized when the turf areas are fed regularly.

Care should be exercised in selecting the proper grass food. Nitrogen is the most important nutrient in grass feeding. The second ingredient of a complete fertilizer is phosphorus, not required in as large quantities as is nitrogen. Potash is the third and last component of a complete fertilizer and is less important than are the other two.

Formulas prepared as general garden or farm fertilizers are not recommended for grass and their use does not represent efficient maintenance practice. Special grass foods have been developed as the result of generations of experience in formulating commercial fertilizers and these are recommended.

Lime, often needed on lawns, is not a fertilizer but a soil conditioner. When soils become acid, it is well to correct the condition with an application of lime. Ground agricultural limestone is the best material for this purpose, the amount to apply depending upon the degree of acidity.

Whether or not a lawn soil is acid can be determined only by a soil analysis, easily available from the county agricultural agent or a nearby state experiment station. The soil or chemistry department of the school itself may be equipped to handle a simple test to determine the degree of soil acidity and the amount of lime required to correct the condition.

• HIGH MOWING. Cutting the grass is an important point of maintenance, not only because it consumes a considerable portion of the budget but also because there is a right and wrong way to mow grass, meaning the difference between success and failure in caring for turf.

Less difficulty is involved in mowing lawns the correct way. Although the advantages of cutting the grass high have been realized by successful caretakers for a period of seven or eight years, close mowing is still entirely too common. This practice is more injurious than it is beneficial.

The advantages of higher cutting are stronger top growth, stronger root growth, fewer weeds and conservation of soil moisture.

All these facts contribute to greener grass during naturally dry periods, as many campus lawns involve so much area that supplying water is out of the

question. The fact that higher cutting results in greener turf should be sufficient proof of its value.

For campus lawns the mowers should be adjusted to cut between 2½ and 3 inches; nor does this mean that the frequency of mowing need be increased. As a matter of fact, less frequent mowings are recommended for the health of the turf.

High cutting is especially important in the maintenance of athletic fields and playgrounds. Evidence of this fact continues to accumulate. Healthy turf on athletic fields should be maintained by mowing no closer than 3 or 4 inches, the only exceptions to this rule being on baseball infields and golf courses.

Trials by competent researchers in recent years have proved that mowing grass at 3 to 4 inches has in many cases more than doubled the amount of live root growth as compared with root growth resulting from cutting grass at conventionally low levels. The stronger the root growth, the more resistant is the sod to weed, drought and pest.

• CORRECT WATERING. Watering large lawn expanses is not always possible and should not be undertaken unless it can be done properly.

In order to substitute artificial moisture for natural rainfall it is important to soak the soil thoroughly to a depth of 5 or 6 inches. Under average conditions this represents a rainfall of 1 inch. In other terms, this means 27,300 gallons of water an acre, or approximately 635 gallons per thousand square feet. The water should be supplied at a slow but uniform rate so that it soaks into the soil.

When water is supplied in such copious quantities, it is necessary to repeat the watering only every ten days or two weeks during extremely dry weather. The appearance and condition of the grass may determine when water is needed but it is best to try to anticipate the turf's need for moisture by occasionally removing a plug of sod to a depth of 4 or 5 inches to check on the moisture content of the soil throughout the root zone.

If adequate water cannot be supplied, light, frequent sprinkling should be avoided as this practice tends to encourage shallow roots which, in turn, lead to a weak and vulnerable turf.

It is especially important to keep athletic fields and other areas provided for concentrated use in a well-watered condition during periods of drought. Except in arid regions, campus lawns maintained at the proper height of cut seldom require artificial watering.

• TIMELY REPAIRING. Occasionally it becomes necessary to repair or to renovate a lawn section that has received excess traffic or has been damaged by a construction or expansion program. Such repair work should take place during the two most nearly ideal seasons of the year for starting new grass, *i.e.* early spring and early fall.

Poor lawn spots resulting from neglected maintenance are not difficult to improve. They may be gradually brought back into first-class condition by following the principles set forth previously, namely, regular feeding, high mowing and intelligent watering.

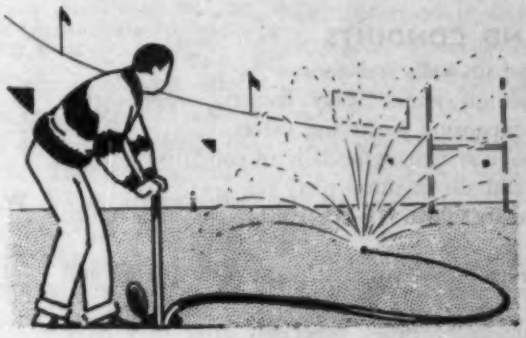
More extensive repairs involve the introduction of good top soil, proper drainage and grading prior to preparation of the seed bed. New seed beds should be provided with an ample quantity of special grass food. The fertilizer should be supplied at such a rate that 2 pounds of available nitrogen are furnished per thousand square feet. This is the equivalent of applying 80 pounds of nitrogen per acre.

The grass seed selected should be of the highest quality, free of weeds and containing a minimum of inert matter. The mixture should be made up predominantly of perennial or permanent turf-producing varieties of grass. A small percentage of fast-growing, temporary grasses is required to serve as a nurse crop while the permanent varieties are getting started.

For quick results, 5 pounds of high quality seed should be planted per thousand square feet. To thicken established turf, half this amount is needed. After distributing the seed evenly, the area should be raked and rolled lightly to bring the seed into closer contact with the soil and to hasten germination.

Lawn pests are really not bothersome in campus lawns that are cared for by a proper maintenance program. Preventive maintenance as outlined in the foregoing paragraphs keeps the turf in such a healthy condition that it is able to compete successfully with potential pests, such as weeds, insects and turf diseases. These dangers are always lurking in the background, ready to move in and take over when the grass becomes weakened.

• ATHLETIC FIELDS. Athletic field turf is required to support heavier traffic than are average campus lawns, and maintenance practices should be designed to keep the grass in a stronger position to survive heavier use. Such areas should be planted and maintained with wearing qualities as well as with attractiveness in mind.



The seeding rates recommended for campus lawns are increased for athletic fields. Turf should be fed twice as frequently. As higher cutting, above 3 or 4 inches, at infrequent intervals contributes to a sturdier turf, football, soccer and practice fields should be maintained accordingly. Although it is not always practical to supply water artificially to large campus areas, athletic fields require thorough watering.

Golf courses which adjoin campus lawns, as they do at many schools, should be cared for in line with the principles accepted for best golf course greens keeping.

Problems of grass growing are largely the same whether the turf is being produced for campus lawns, parks, home lawns or golf course fairways. If success is to be achieved, nature demands that certain basic principles be followed. The principles seeming to be most successful have been presented here and, if followed, should lead to beautiful campus lawns.

CHECK LIST for HEATING SYSTEMS

A. F. GALLISTEL
Superintendent of Buildings and Grounds
University of Wisconsin

CARL M. F. PETERSON
Superintendent of Buildings and Power
Massachusetts Institute of Technology

MAIN PLANT

- ☐ Check and repair boilers
- ☐ Repair stokers, brickwork in furnaces, softeners, filters, high and low pressure steam traps
- ☐ Repair and clean automatic control equipment, boiler feed pump valves, pistons, bearings, centrifugal pumps, feed-water heaters, sump pump pits, valves, baffling in boiler setting, soot blower units
- ☐ Examine and reface blowoff valves
- ☐ Repair dampers, breechings, forced draft fan blades, bearings, coal handling and water weighing equipment, ash and coal bunkers

TUNNELS AND CONDUITS

- ☐ Clean and repair walls and floors
- ☐ Check expansion joints, leaky flanges, nipples, trap repairs, expansion joints and valves
- ☐ Check drainage systems, especially in conduits
- ☐ Clean sand and silt in sump pits
- ☐ Check automatic float control equipment and return pumps
- ☐ Check and repair covering and paint rusty piping and supports
- ☐ Check alignment of pipes, especially after they have been put back on pressure

MAINTENANCE OF HEATING SYSTEMS

- ☐ Examine pipe supports and check pitch of mains, check pipe covering, drips, steam traps, valve stems, radiator valves, radiator supports, float control equipment, stuffing boxes of centrifugal pumps, also alignment and lubrication of the last
- ☐ Drain and flush oil and water from air tanks and clean air filters
- ☐ Check valve diaphragms, radiator traps and air vents

INDIRECT HEATING COILS

- ☐ Check hand, pneumatic and electric steam valves to indirect blast coils
- ☐ Examine by-pass valves, motor supports and linkage
- ☐ Check thermostats, humidistats and float valves; clean scale on humidifier coils

UNIT VENTILATORS

- ☐ Check filters and replace or clean
- ☐ Inspect fan motors, bearings, dampers, steam traps and air vents
- ☐ Use vacuum cleaners to clean cabinets and heating elements of unit heaters
- ☐ Flush out condensation meters and surge tanks to remove sediment and oil
- ☐ Take condensation meters apart, clean rotary buckets and check for balance and leakage
- ☐ Examine bearings

HOT WATER HEATERS AND STORAGE TANKS

- ☐ Examine heating elements, remove scale and check for steam or water leaks

VACUUM HEATING SYSTEMS

- ☐ Pack vacuum pumps, check valve springs and other mechanical devices on the pump and control
- ☐ Check gauges, using deadweight tester or clean manometers
- ☐ Pack transfer pumps, check linings and valves
- ☐ Clean and paint receiver tanks
- ☐ Check metaphragms and radiator traps for leakage
- ☐ Clean thermostats and lines leading to and from them; if electrical, clean contacts
- ☐ Pack all valves marked during winter heating season and all valves which cannot be packed during the winter months
- ☐ Check controls on air intake and exhaust dampers

- ☐ Check traps and regulation valves
- ☐ Repaint inside of tanks if necessary

WATER SOFTENERS AND FILTERS

- ☐ Check filter beds for condition and free board height
- ☐ Examine for corrosion
- ☐ Remove all softener elements, if necessary, to inspect distribution systems and jets
- ☐ Scrape and clean rusty surfaces; apply proper type of paint
- ☐ Replace with thoroughly clean or new softening element or filter material
- ☐ Check meters and float controls

SALT BRINE TANKS

- ☐ Empty every six months to remove accumulated sand and silt
- ☐ Flush pipe lines; check valves, and repaint with special noncorrosive paint if necessary

VENTILATION AND EXHAUST FANS

- ☐ Check bearings and lubrication, removing excess oil
- ☐ Check alignment of belts and adjust slack; clean fan blades to prevent unbalancing of wheel and reduction of efficiency
- ☐ Check motors for clearance
- ☐ Drain and refill bearings and flush

REGULATING OR REDUCING VALVES

- ☐ Check seasonally to see that valve seats and disks are in good condition
- ☐ Repack valve stems and renew diaphragms if necessary
- ☐ Blow down balance pipes

MISCELLANEOUS

- ☐ Check all types of equipment in research laboratories, including steam and cooling coils, sterilizers, stills, ovens, steam chests, water heaters and similar items
- ☐ Clean all motors and see that dust is blown out; renew brushes, and install new bearings if necessary
- ☐ Tighten terminal wires, check grounding, reface commutators, or slip rings, and pulleys.

QUESTIONS AND ANSWERS

College Accident Liability

Question: What liability does a college assume for accidents incurred by students participating in a flight training course?—S.W., N. Y.

ANSWER: A state college or university is usually immune from damage suits unless the legislature enacts statutory permission for the suit to be brought. The law regarding nonprofit privately controlled institutions varies from state to state, but there is a growing tendency to hold such an institution liable for an injury to a student resulting from negligence of its employes. Colleges offering flight training generally protect themselves by carrying liability insurance covering property damage and personal injury.

When the flight training is given for the college by a separate contracting agency, such agency usually carries liability insurance. Individual flight trainees are also often advised to purchase individual or group policies for their own personal protection. Aside from the somewhat uncertain question of institutional liability, these measures are wise and humane because they reduce the likelihood of an innocent party or his family being left without indemnity in case of accidental injury or death.—M. M. CHAMBERS.

How Much Credit to Veterans?

Question: To what extent should financial credit be extended returning veterans entering college?—J.A.H., Utah.

ANSWER: From the standpoint of a state-operated higher educational system and its composite institutions, observations are as follows: (1) in general, veterans are given the same treatment as nonveterans; (2) board and room charges are paid in advance, the same as for nonveterans, with no concessions being granted to such veterans; (3) loans to veterans are subject to the meeting of standards which apply uniformly to all students; (4) fees and tuition which are required to be paid in advance by nonveterans cannot, of course, be collected from the Veterans Administration until a later date.

It is my opinion that the foregoing policy now being followed in the Oregon higher educational system is sound and fair to both veterans and nonveterans.—H. A. BORK.

Promoting the "Cafeteria" Idea

Question: If cafeteria feeding is more economical, how can students be sold on giving up the traditional table service in dining halls?—F.S.D., Ala.

ANSWER: Present conditions offer the best possible excuse for conversion from table service in dining halls to cafeteria service. The government's new food orders, which include the limiting of inventories of certain foods, make it practically mandatory that all hotels, restaurants, schools and institutions do everything possible to conserve food. Furthermore, increasing labor and food costs necessitate economical operation if we are to hold the price line.—D. C. FORD.

Personnel Policy

Question: We are anxious to set up a personnel policy for our nonacademic employss. Could you offer some recommendations or refer us to other experience in this field?—R.E., Mont.

ANSWER: Every institution has its own problems, and it is difficult to set down any given rules for setting up a personnel policy. Certain things, however, are fundamental, such as the centralization of employe records which include vital statistics and which must be kept up to date. There is need, also, for a central place for applicants to register. Someone who has the respect of the institution and some knowledge of its needs should be given responsibility for establishing such an office. This person must have the authority to make decisions that will be supported by the president or a representative of the president. He should have membership in any local or national organizations that have to do with personnel problems. In establishing such an office, it is advisable to visit large institutions where offices are already in operation and ask the help of their directors.

It is well to remember "it is not what you do but how you do it" that makes any office work well.—GLADYS MCCAFFERTY.

The inquirer can read with profit the article by Donald A. Dickason on the University of Illinois' personnel policy on page 8 of this issue.—*Ed.*

Maintenance in Budget

Question: What percentage of the annual college budget should be provided for maintenance of buildings?—W.M.G., Ind.

ANSWER: Innumerable factors combine to make indefinite the percentage of the annual budget that should be provided for the maintenance of buildings. Among these factors might be named the age and type of construction of the buildings, the intensity of use as represented by class and laboratory schedules, the character of the educational program and the salary schedule of the college. In a larger university offering instruction in the arts, sciences and professional and graduate work, 10 per cent of the annual budget for administration, instruction and research would not be an excessive allocation for the maintenance of buildings. During the war the practice of deferring building maintenance items was necessary and widespread. For this reason recently published reports would probably be misleading.—W. T. MIDDLEBROOK.

Financing Student Unions

Question: Can you tell me where I can get additional information regarding the financing of student unions?—H.K.F., Pa.

ANSWER: From the national office of the Association of College Unions. D. R. Matthews of the University of Florida, Gainesville, is the new president of the association which publishes a "Handbook on College Unions" which includes a chapter on financing and issues a quarterly bulletin to members of the association. It also offers a professional consulting service to assist colleges with a detailed study of local union planning problems.—PORTER BUTTS.

THE ROVING REPORTER

"Job Training"

Several college business officers have expressed concern at the lack of properly trained young men for positions of business managership in colleges and universities. As a step in the right direction, Charles W. Hoff, finance secretary of the University of Omaha, has launched a new course in "on-the-job training" of young men on the campus for the position of college business manager. Funds necessary for carrying out this project have already been voted by the Nebraska legislature.

Public Relations

Elmer G. Sulzer, University of Kentucky public relations director, has obtained good results from a tag attached to each university telephone. The tag, printed in red on white stock, carries this reminder: "HAVE YOU TOLD PUBLIC RELATIONS . . . About . . . That speech, That conference . . . That trip . . . That appointment . . . That honor? If it concerns YOU it concerns the UNIVERSITY. Phone U-50 about it TODAY. It is not news AFTER it happens!"

Employment Service

The Rutgers University Office of Personnel and Placement, which was set up to help students and alumni find jobs and which has concentrated lately on giving this service to returned Rutgers veterans, has taken on a new postwar task . . . aiding the wives of student veterans to locate employment in the community.

More than 20 per cent of veterans in the men's colleges of the university are married, and many of their wives want to work not only to help out with the family finances but also to take up some of their time while their husbands are busy in classrooms and study halls.

To aid these young women, the office of personnel and placement has extended its facilities to include their placement in various positions on the campus and in New Brunswick. James F. McLean, assistant director of the office, has been placed in charge.

The majority of the wives are interested in clerical and secretarial positions, but there are others who are qualified in teaching, nursing and similar fields. Several are veterans of women's service organizations. Mr. McLean states that the student wives who have applied for jobs are exceptionally well qualified for the work in which they are interested and that favorable reports have been received from employers who have hired them.

Milk Bottle Collars

Dairies in Bloomington and Normal, Ill., were asked to cooperate with Illinois State Normal University in helping solve the emergency housing problem for returning war veteran students and their families. Milk bottle "collars," carrying the plea of the university that home owners advise the institution of any spare rooms available for student residence, were found to be very effective, according to Preston Ensign, business manager of the university. Mr. Ensign reports this proved to be the single most productive publicity approach in turning up additional housing facilities.

Horses and Dormitories

Friendliness and good public relations on the part of faculty members often bring about results in most unexpected ways. The experience of Carthage College is a case in point.

As reported by President Erland Nelson, one of the faculty members there likes to ride his horse into the country near the college. One evening last summer, the faculty man met a farmer. The conversation for the next hour was on horses, not on college at all. The next morning the farmer left a check for $200 at the local bank with instructions to apply it on a new dormitory for Carthage College.

Sitters' Club

"I'm sitting this one out." That's the answer frequently given by University of Cincinnati coeds when their campus swains telephone to ask "What are you doing tonight?"

The Cincinnati girls are going into action as "sitters" with enthusiasm. Under the supervision of several leading coed organizations, they are "minding the baby" for veteran students living on the campus so that the infants' mothers can go shopping in the afternoon or so that Mr. and Mrs. ex-G.I. can attend church or find recreation outside the home.

Nearly half of the families living in "Varsity Veteransville," as the campus housing colony for married veteran students is known, have tots who range in age from one week to six years.

The coed "sitters," donating their services, are available each afternoon from 1 to 5 p.m., on Friday, Saturday and on Sunday nights, and on Sunday mornings. Those filling evening stints must be escorted, upon the veteran's return, to their sorority house or the women's dormitory or their own home, as the case may be.

The veterans' wives, particularly, view the coeds' service as a boon, as most of the married veteran students are "living on a shoestring" as far as family finances are concerned.

Catalog Reprinting

One of the recurring problems facing business officers is that of the expense involved in reprinting the college catalog in order to bring the course offerings up to date. The Principia College, Elsah, Ill., has worked out a system of submitting material to department heads in advance with a word of caution to refrain from unnecessary changes merely for the sake of variety. Though the savings in printing composition costs have not been overwhelming, Mrs. Rebekah Deitz, publicity director, states that at least $200 has been saved annually.

NEWS

500,000 Prospective Students to Be Denied Entrance . . . V.A. Provides for Refunds to Students . . . Supplement Adds Buildings Under VHP-1 . . . Office of Education Appoints Dr. Russell . . . Court Upholds Taxes on Stadium . . . 1,500,000 Textbooks for Free Distribution . . . Michigan State Receives Kellogg Foundation Award . . .

New C.P.A. Priority Ratings

An amendment to the new PR 28 issued June 26 states that the Civilian Production Administration may grant a CC rating under this regulation to get material when the item is needed for emergency requirements for veterans' educational facilities. C.P.A. reserves the right, however, to limit the amount of a scarce material which a holder of a CC rating may order from one source of supply.

Still in the discussion stage is a proposed super rating, possibly a "certified HH," to enable the Federal Public Housing Administration to convert 200,000 temporary dwelling units from army and navy buildings and facilities for veterans at educational institutions and elsewhere.

Only when absolutely necessary is C.P.A. considering the use of such ratings. If they are used, they will not be issued for more than 20 per cent of the monthly production of gypsum board, structural insulation board, laminated fiber board and concrete blocks.

Provision for making brick, tile and concrete blocks available for unrated small quantity needs, such as minor maintenance and repair jobs, has been made by C.P.A.

Draft Liability Is Fixed

Extension of the Selective Service Act for nine months with draft liability fixed for men 19 to 45 finally cleared congressional hurdles June 25. Separate legislation increasing servicemen's pay was also passed by both houses.

The measure terminates Selective Service March 31, 1947; releases fathers now in service upon application after Aug. 1, 1946; bans the further induction of fathers; releases on and after Oct. 1, 1946, all men who have been in service eighteen months or more, who apply for discharge, and bans reinduction of any veteran who has served overseas in World War II. Stricken from the bill was a Senate provision to exempt scientists and technological students from the draft. Also eliminated was the House-approved "holiday" on all inductions until October 15. The army, however, plans no draft calls for July and August.

Surplus Property Sales at Site

The War Assets Administration is stepping up sales of surplus property through a system of sales at site disposal. Sales at site are taking place where large quantities of surplus property are now stored: warehouses of military bases, naval establishments and war plants.

Sales at site are supervised by private concerns under W.A.A. control. They are original sales of property declared surplus to W.A.A. The 33 regional offices of the War Assets Administration have shed selling responsibilities and are retaining only administrative and accounting operations.

Free Textbooks for Veterans

A million and a half college textbooks are to be made available without cost to veterans enrolled under government sponsorship in colleges and universities, W.A.A. announces.

The textbooks included in the transfer to the Veterans Administration are of the type used principally in army and navy wartime training programs. They are not to be confused with a quantity of paper-bound U. S. Armed Forces Institute books.

The Library of Congress, acting as agent for the Veterans Administration, will distribute the books to educational institutions which will, in turn, distribute them to veterans.

The library will mail printed lists of the books to accredited colleges and universities so that they may select the volumes they want. Two catalogs will be sent to each business manager of the 1700 institutions listed in the Directory of the U. S. Office of Education. Each school will set up its own distribution system.

Snyder Reports to White House

More than 2,000,000 young men and women plan to go to college this fall but half a million will be turned away, John W. Snyder's report to the White House declared. Among those denied entrance will be 270,000 veterans.

A federal interagency committee recently appointed by Mr. Snyder has developed a nine point program of joint action to meet the most pressing of the immediate problems. These steps have already been taken:

1. All currently unused army and navy facilities with any appropriate equipment they contain are being made available to colleges and universities on a no-cost lease basis.
2. The temporary housing program authorized by Congress to assist educational institutions has been expanded to provide living quarters for 300,000 student veterans.
3. The Civilian Production Administration has liberalized procedures so that educational institutions may build nonhousing facilities under VHP-1.
4. Priority regulations are being amended to permit assignment of preference ratings to new construction projects, such as clinics, laboratories and dining facilities.
5. Distribution of surplus equipment and supplies has been speeded up.
6. Donation programs of the War and Navy departments and other agencies have been expanded, particularly with respect to laboratory and scientific supplies and equipment.
7. Two million surplus textbooks are being distributed at nominal prices. Production of additional new textbooks is being pushed.
8. Clearing houses are being set up in the various states to supply current information on vacancies in schools and particular courses.
9. Recruitment and placement programs for college and university teachers have been considerably intensified.

Mr. Snyder stated that colleges and universities must themselves work out ways of utilizing existing facilities. Permanent facilities must be pushed with all possible vigor. Staffs must be expanded. Many colleges today can make more effective use of their present campus facilities. Dining halls and gymnasiums can be used in shifts. Laboratories, classrooms and libraries must be used for longer hours.

Though the report deals with emergency problems, it also reviews some of the long range difficulties to be met. College and university enrollment will not be followed by a drop to prewar levels.

Housing for Student Veterans

Most of the first 100,000 temporary emergency dwellings for student veterans have been completed or are under construction, Philip M. Klutznick, commissioner of the Federal Public Housing Authority, announced recently. Every effort is being made, he said, to achieve a goal of 300,000 housing units for allocation to educational institutions in 1946.

V.A. Refunds to Veteran Students

The Veterans Administration has set up a procedure by which colleges can make refunds to student veterans who entered these institutions before December 28 of last year at their own expense while on terminal leave or while awaiting discharge from a hospital, according to a recent announcement.

Refunds cover tuition, books and supplies. The G.I. bill, amended by Public Law 268, Dec. 28, 1945, makes provision for such cases.

The institution in which the veteran is enrolled must have been approved by the appropriate state agency. Refunds are handled by the V.A. regional office having jurisdiction over the area in which each veteran lives.

The school gives such veteran a certified statement supplying details of the period he was enrolled, the course of studies he pursued and the money he paid for tuition, books and supplies. The statement must indicate that the institution reimbursed him for the money he spent.

The veteran submits this certified statement to the V.A. regional office. The college submits to the same office a public voucher covering the amount refunded to the veteran. The money refunded must not exceed the amount which V.A. would have authorized for education or training under instruction in effect during the period for which the veteran asks reimbursement.

Products Critically Scarce

A revised list of critically scarce products was made public June 5 by the Civilian Production Administration. A college or university that is building a dormitory to be used entirely for housing veterans may apply on PR 33 for such items.

Recent additions to the schedule of critical products are: asbestos cement shingles and flat sheets; asbestos cement siding and flat sheet specialized machinery; asphalt and tarred roofing products; asphalt and tarred roofing specialized machinery; warm air furnaces; gypsum board and lath; certain types of plumbing fixtures; large power presses and copper magnet wire; lead, and convector radiation.

The schedule already included the following building products: clay building products; malleable and gray iron castings, including cast iron soil pipe and radiation; lumber, logs, pulpwood, softwood veneer, softwood plywood, millwork; concrete building products; titanium oxide; resin, fractional horsepower A.C. motors.

Supplement 3 to VHP-1

Additional lists of types of buildings which either come within the cost allowances of the Veterans Housing Program Order 1 or are excluded from the controls of the order have been issued by the Civilian Production Administration. The additions are given in Supplement 3 to VHP-1.

Additions of interest follow:

The $400 small job allowance includes any individual house designed for occupancy by five families or less even though it is on the property of an institutional concern and used for the purpose of housing employes of the institutional concern, and any house on a campus owned by a college and occupied by a college official.

The $1000 small job allowance includes a dormitory or fraternity; a building used for a social club; a service station or garage; a greenhouse; a building on an experimental farm; a college or university laboratory, field house or classroom building.

The $200 small job allowance includes a stadium and grandstand.

Russell Succeeds Kelly

Dr. John Dale Russell, professor of education, University of Chicago, is the new director of the Division of Higher Education, U. S. Office of Education. On July 1, he succeeded Dr. Fred J. Kelly, who retired after fifteen years' service.

Since July 1931 Dr. Russell has taught classes in higher education, administration and finance of higher education at Chicago and has supervised student research. During this period he served as secretary of the commission of colleges and universities of the North Central Association of Collegiate and Secondary Schools.

In June 1945, Dr. Russell was granted leave to take the post of dean and academic adviser of the American University in Biarritz, France. He was responsible for the selection of faculty members for army university centers in the European theater and for supervising the academic program.

Release Teachers From Service

Release of some 400 college and university teachers from the armed forces has been obtained since early February, Dr. E. V. Hollis, principal specialist in higher education, U. S. Office of Education, said recently. The War and Navy departments agreed to release a limited number of individuals before their regular date of discharge under the point system to relieve the shortage of instructional personnel in colleges and universities.

The U. S. Office of Education screens the applications for release of members of the armed forces qualified for college teaching. About one in each two applicants has been recommended for release. The army and navy has honored practically every recommendation.

Any accredited institution of higher education may request the Office of Education to certify for release any member of the armed forces qualified for college teaching whom it desires to employ full time. It is not necessary for the man to have been a member of the faculty of the college requesting his release.

Court Upholds Taxes on Stadium

Rutgers University must pay the township of Piscataway taxes on $75,625 of 1942 assessments on its playing fields and $1,000,000 concrete stadium which, the state supreme court ruled, were built primarily so the general public "might indulge its fancy to witness athletic contests."

The stadium, built by the F.W.A., is the focal point of the university's 138 acre athletic plant on the opposite bank of the Raritan River from the Rutgers campus in Piscataway Township.

The court, in its opinion written by Justice Frederic R. Colie, did not state whether the property is now tax exempt. Since institution of the litigation, Rutgers has been designated as the state university for New Jersey.

Announces Retirement Plan

St. Louis University has announced a voluntary retirement and insurance plan for administrative officers and faculty members. The plan, which provides for retirement benefits at the age of 65 for all those who are 55 and younger, is a cooperative program in which the university contributes half the premiums.

In the event of resignation from the faculty, an employe gets a refund of his entire contribution. After five years the participant will receive gradually increasing shares of the contribution made by the university in his behalf. Thus, a member of the faculty who has not reached the retirement age but who resigns after twenty years of participation receives all of his contributions plus the amount of the premiums contributed by the university.

Million to Michigan State

President John A. Hannah of Michigan State College has announced a gift of $1,000,000 by the W. K. Kellogg Foundation of Battle Creek, Mich., for the development of a program in continuation education.

This program is designed to improve living, cultural, economic and health conditions in rural and small areas. Approximately $750,000 will be spent for construction and equipment and the remainder will be used for personnel and operation.

According to Dr. Emory W. Morris, director of the foundation, many people want only short courses for their particular needs now, and that is the basic idea behind the continuation education program. Work will be given on a noncredit basis.

Short courses have been carried by Michigan State College for more than forty years.

Starts Faculty Endowment Fund

One hundred shares of stock valued at more than $5000 have been given to the University of South Carolina for use in establishment of a faculty endowment fund, R. Adm. Norman M. Smith, president, announced recently.

Proceeds will be allocated to those members of the faculty whose services to the university most merit financial assistance. Such matters as health, research and other service to the institution are to be taken into consideration.

The board of trustees of the fund will consist, under the terms of the gift, of the president of the university, the dean and one member of the faculty to be elected by his colleagues.

Extends Length of School Day

To meet the expected enrollment of 15,000 students at Urbana this fall, the University of Illinois is planning more intensive use of its plant by scheduling classes through the noon hour and up to 10 p.m., according to Provost Coleman R. Griffith, chief education officer of the university.

A central scheduling office to handle all assignments of classroom and laboratory space for maximum use has been established. The noon hour will be treated no differently from any other hour of the day.

Memorial Scholarships at Alfred

Mr. and Mrs. John P. Herrick of Olean, N. Y., have established at Alfred University three memorial scholarships in memory of men who served in the armed forces during World War II. Two of the scholarships went into effect in September of last year; the other will be in force next fall.

Proceeds from the scholarships will be available to children of veterans of World War II who are high school graduates from schools in two counties in New York State, Allegany and Cattaraugus, and two in Pennsylvania, McKean and Potter, the area where Mr. Herrick spent most of his life.

To Increase Faculty Salaries

Mount Holyoke College trustees have launched a $2,000,000 development program with major emphasis on the endowment of faculty salaries, Dr. Frederick May Eliot, president of the American Unitarian Association and chairman of the board, announced recently.

Plans include the establishment of a visiting professorship to rotate among different departments and a group of permanently endowed chairs for each of the divisions of studies offered in the curriculum, Dr. Eliot explained. Also on the program are a new chemistry building, to cost approximately $500,000, and the completion of funds, already partially raised, for a physical education building.

Insurance Firm Gives Scholarships

Establishment of an annual $3000 scholarship fund to be divided equally between Butler and Indiana universities, the first scholarship grant of its kind directly to educational institutions, was announced by President George A. Bangs of the American United Life Insurance Company.

Film Production Center in Georgia

The University of Georgia has been selected as headquarters for nine southeastern states sponsoring production units in the Southern Educational Film Production Service. This agency, recently established by an initial grant of $40,000 from the Rockefeller Foundation's General Education Board, will produce educational films for the various units of the University of Georgia System, especially those having to do with educational training.

Virginia, North and South Carolina, Tennessee, Kentucky, Florida, Alabama and Mississippi have similar units.

Dubuque Starts Centennial Fund

The receipt of securities having a current market value of a little more than $80,000 was announced recently by President Dale D. Welch of the University of Dubuque. These securities are the major part of a trust created by the late Nathan P. Hull of Yakima, Wash.

This gift brings the total raised during the first twenty months of the university's centennial development fund to $366,163. This eight year campaign has as its goal $1,500,000.

Names in the News

Harry T. Healy, comptroller of the University of Arizona since 1938, has accepted the post of director of the budget of the Georgia State System of Higher Education. He will have 14 state colleges, in addition to the University of Georgia, under his supervision. During the war he was officer-in-charge of the contract rate analysis unit of the finance section of the navy's bureau of personnel.

R. Wayne Gill has been appointed business manager at James Millikin University, Decatur, Ill.

Burt T. Hodges was recently appointed to the offices of treasurer and secretary of the board of trustees of Denison University, Denison, Ohio. He succeeds the late *Dr. Millard Brelsford,* who had served forty-four years as a trustee and since 1939 as treasurer. Mr. Hodges was assistant treasurer and bursar before his new appointment.

Harold F. Archibald is the new business manager of the Keuka College, New York, where he was formerly professor of mathematics.

William A. Bodden, formerly assistant controller and chief accountant of Purdue University, has been appointed treasurer and controller of Smith College, to succeed the late *George P. Hyde.* Mr. Bodden has been a member of the Purdue University business staff since 1931 when he accepted the appointment of as sistant controller.

Allie Glenn, treasurer, Alabama Polytechnic Institute, Auburn, Ala., celebrated in June her golden anniversary of service. She succeeded her father as treasurer of A.P.I. upon his death, having served as his assistant since 1886. In the entire history of the institution only one name has been signed to checks issued by the college, Glenn.

Ross Baxter Willis, formerly acting head of the department of business administration at the University of Western Ontario, London, Ont., has been appointed comptroller. For four years during the war Mr. Willis served as assistant director of the Wartime Prices and Trade Board, management service division, Toronto.

David E. Stephen is the new purchasing agent of Catholic University of America; Washington, D. C.

Ward G. Biddle, vice president and treasurer of Indiana University, died May 28 after a three months' illness. He had been associated with the university of which he was an alumnus since 1923, serving in succession as bookstore manager, director of the Indiana Memorial Union, comptroller, secretary of the board of trustees and, since 1942, vice president and treasurer. He was a former member of the Indiana General Assembly, having served as representative in 1930-32 and as senator in 1932-36. Mr. Biddle was active in many professional and civic societies and served in 1941-42 as president of the Association of University and College Business Officers of Indiana.

James Parker Hall of Clark, Dodge and Company, New York, has been appointed treasurer of the University of Chicago, effective July 8. He succeeds *Lloyd R. Steere,* who retired after twenty years' service. Head of research and the statistical analysis at Clark, Dodge and Company, Mr. Hall has had seventeen years' experience on Wall Street in all phases of security and investment banking.

Joseph H. Goss, superintendent of buildings and grounds at Denison University, returned early this year to resume his duties after three years with the navy's Seabees.

C. E. Teague has been appointed assistant controller of the University of North Carolina.

Joseph W. Getzendanner Jr. has been recently appointed comptroller of Trinity College, Hartford, Conn. For the last four years he has been with the navy as procurement officer, fighter director and contract termination officer. As a civilian he had been both general credit manager of the National Refining Company and assistant to the general sales manager of the American Radiator Company in New York City.

DIRECTORY OF ASSOCIATIONS

Associations of College and University Business Officers

Central Association

President: C. D. Simmons, University of Texas; vice president: Herbert Watkins, University of Michigan; secretary-treasurer: T. E. Blackwell, Washington University.

Eastern Association

President: W. R. Wagenseller, Drexel Institute of Technology; vice president: H. W. Herzog, George Washington University; secretary-treasurer: Boardman Bump, Mount Holyoke College.

Southern Association

President: W. Wilson Noyes, University System of Georgia; first vice president: George R. Kavanaugh, Berea College; second vice president: W. T. Ingram, Alabama Polytechnic Institute; third vice president: Howard MacGregor, Agnes Scott College; secreary-treasurer: Gerald D. Henderson, Vanderbilt University.

Western Association

President: J. Orville Lindstrom, University of Oregon; vice president: William Norton, University of California; secretary-treasurer: K. B. Sauls, Brigham Young University.

Association of Business Officers in Negro Colleges

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PRODUCT INFORMATION

Information on the materials, equipment and supplies with which an institution is built, operated and maintained and which are used in its various departments is of vital interest to those charged with the business operation. College and University Business recognizes the importance of this information and believes it has rendered a real service by grouping manufacturers' announcements and new product descriptions into a separate part of the magazine. We believe this is an infinitely better plan than to mix such information through the editorial pages where it becomes obscure and confusing.

You will find manufacturers' advertisements from pages 41 through 72. Pages 66-71 contain descriptions of new products and items of interest. Further details on any product advertised or described may be obtained without obligation and with a minimum of effort by use of the postcard below.

INDEX TO ADVERTISERS ON FOLLOWING PAGE

USE THIS CARD

This card is detachable and is provided for your convenience in obtaining information on all items advertised in this issue or described in the "What's New" Section. See reverse side.

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CLEANSING DISINFECTANTS
COAL TAR, PINE and ODORLESS

Discuss your cleaning and disinfecting problems with an experienced West representative who can help you select the disinfectant best suited to meet your requirements economically. TERAMINE, ODORLESS DISINFECTANT, is a synthetic disinfectant with high phenol coefficiency, guaranteed to be 10 times stronger bacteriologically than pure carbolic acid against E. B. Typhosa and 15 times stronger bacteriologically than pure carbolic acid against Staphylococcus Aureus (pus germs).

WASHROOM SANITATION
AUTOMATIC DEODORIZATION—LIQUID SOAPS
PAPER TOWELS — DISPENSING EQUIPMENT
BOWL CLEANING & SPRAYING

The West Automatic Drip Machine is designed to meet a need for proper washroom deodorization in a simple, economical and efficient method. When placed above toilets or urinals, an aromatic liquid constantly drops into the bowl, tending to overcome washroom odors at the source.

WEST WASHROOM SERVICE includes servicing AUTOMATIC DEODORIZING EQUIPMENT, regular periodic BOWL CLEANING and disinfecting with WESTAMINE *ODORLESS* DISINFECTANT, by trained West Service Men. Your purchase of West deodorants includes the benefit of these trained Service Men WITHOUT ADDITIONAL CHARGE!

EFFECTIVE INSECTICIDES and RATICIDES

West's VAPOSECTOR FLUID is a *concentrated* insecticide with high killing efficiency and is economical and highly effective against flies, roaches, mosquitoes, ants, fleas, crickets, spiders and many other insects.

RODITE is an especially prepared cereal cracker containing a lure for rodents. It is a ready prepared product. There is nothing to mix; nothing to buy. West practical laboratory experiments have demonstrated, part of a biscuit kills normal sized rats.

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West offers a complete line of products suited to preserve and maintain all types of floors.

LASTINCOTE is an especially hard finish for actively used wood floors. This penetrating sealer dries to a hard lustre yet non-skid finish, that will resist the wear of traffic. Also useful as a finish for woodwork and furniture.

WESTONE—Controls Dust. This liquid chemical floor treatment simplifies floor maintenance problems. It has, in addition to its other properties, a peculiar affinity for dust.

Send for FREE CATALOG

WEST DISINFECTING Company
42-16 West Street, Long Island City 1, New York, N. Y. • DEPT. C. U.
Branches and offices in Principal Cities of United States and Canada

More and

More Evidence—

ACOUSTI-CELOTEX SOUND CONDITIONING

Increases School Efficiency and Comfort!

THE SUPERINTENDENT OF SOUTH CENTRAL PUBLIC SCHOOLS, SEATTLE, WASH. WRITES:

You applied type C-9 ¾ inch Acousti-Celotex to the ceilings of the corridors, and we find that the noise level has been lowered almost beyond belief. It is now possible to carry on a normal conversation in the corridors, and we can readily see that it is going to make a decided difference in the mental reactions on the part of the students and employees in this building. The classroom which you treated with the same material is much improved. The use of sound equipment such as motion picture projectors and play-back equipment function much better in this room than in any non-treated room in the building.

We are very much pleased with the work and hope that we can continue in our program of sound conditioning our school buildings until we have all rooms so treated.

Very truly yours,

J. Wesley Cummings

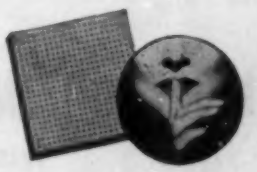
Superintendent

20 years of performance like this is why more schools sound-condition with Acousti-Celotex than with any other acoustical material!

Acousti-Celotex* gives you this double advantage in assured results: 1. *Quality control in manufacture* backed by the reputation and resources of the world-famous Celotex Corporation. 2. *Quality control in installation* backed by Celotex-selected-and-trained local distributors. The experience of more than 100,000 installations makes this the leading acoustical organization in the world.

No matter what your noise reduction problem, consult your local Acousti-Celotex distributor. No obligation. No job is too small and prompt service is assured. Or write to The Celotex Corporation, Dept. CU-746, Chicago 3, Illinois. It will bring to your desk an expert trained in the sound conditioning of schools.

FREE! "Sound Conditioning—A Guide to Those Responsible for Education." Fact-packed, informative, helpful booklet. For your FREE copy write: The Celotex Corporation, Dept. CU-746, Chicago 3, Illinois.



Sound Conditioning with

ACOUSTI-CELOTEX

REG. U.S. PAT. OFF.

* *Perforated Fibre Tile* SINCE 1923

Sold by Acousti-Celotex Distributors Everywhere • In Canada: Dominion Sound Equipments, Ltd.

A PRODUCT OF THE CELOTEX CORPORATION, CHICAGO 3, ILLINOIS

Hillyard Hi-Quality Products Protect

EVERY TYPE SURFACE... BASEMENT FLOOR TO ROOF TOP

In thousands of Colleges, Universities, Public and Private Schools Hillyard Products are doing an excellent job of preserving and maintaining a high standard of cleanliness, safety and economy. Thru Hillyard methods maintenance costs are reduced and many man hours are saved in application and daily maintenance. Hillyards have Floor Treatment Engineers in every part of the country. Write or wire us today for the Hillyard man nearest you, his advice and recommendations are entirely FREE.

THE HILLYARD COMPANY

DISTRIBUTORS.. HILLYARD CHEMICAL CO.... ST. JOSEPH 1, MO... BRANCHES IN PRINCIPAL CITIES
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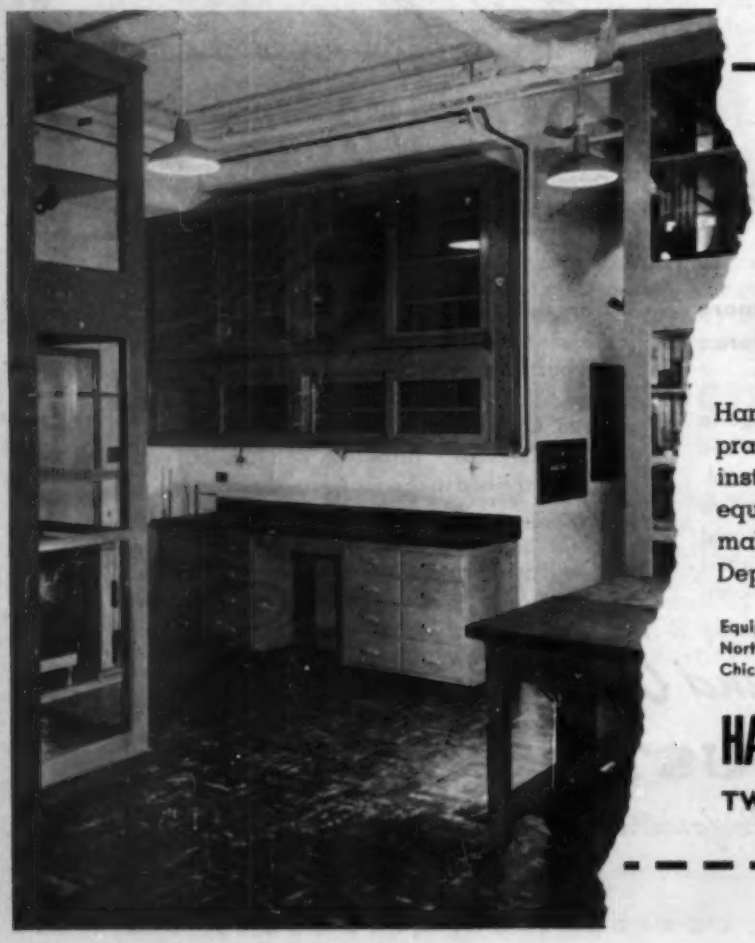

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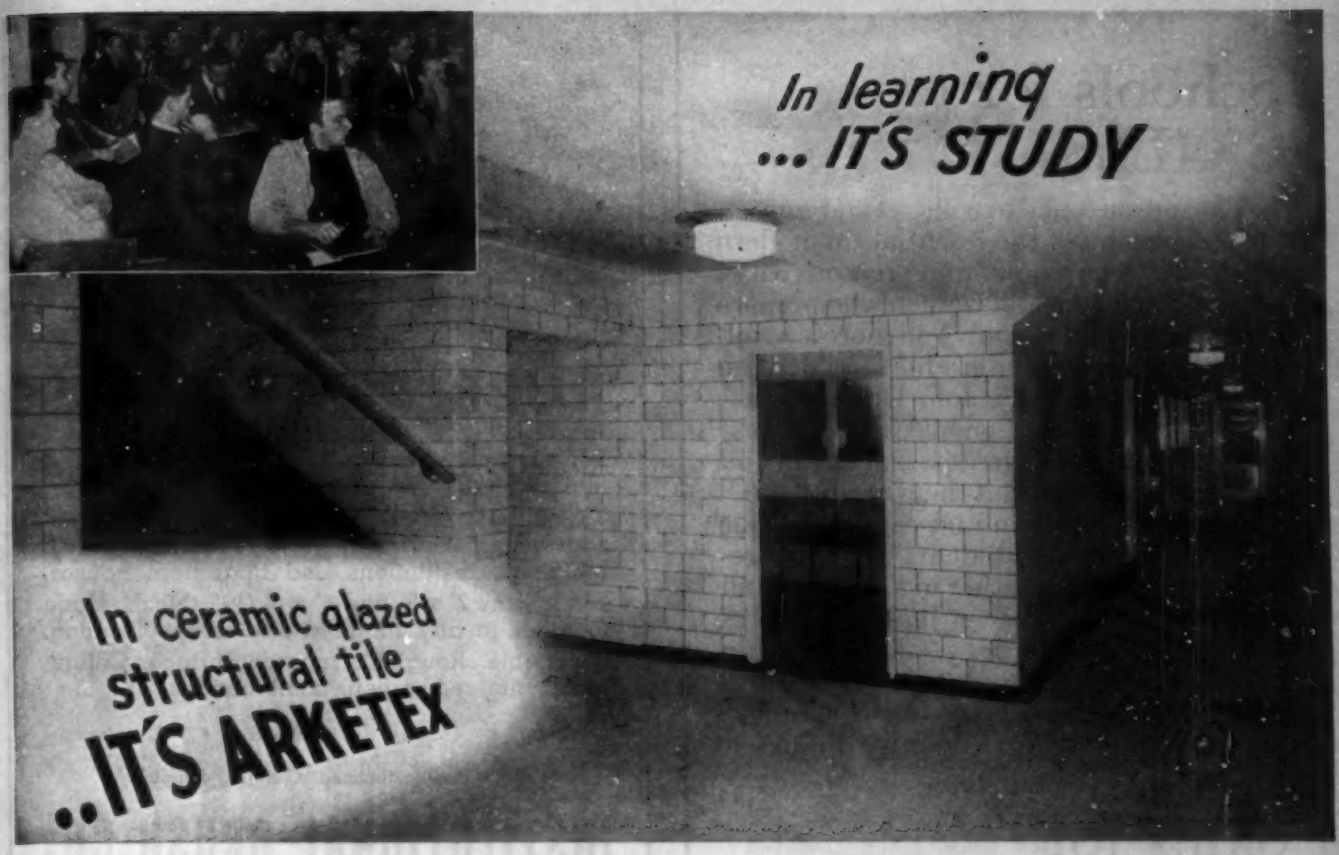
Your Planning Problems

Hamilton offers a creative planning service for practical advice on your individual laboratory installation problems, and modern, functional equipment to fit your specifications. Let us make your planning problems easy. Write Department CUB-7-46 for complete information.

Equipment by Hamilton
Northwestern Technological Institute
Chicago, Ill.

HAMILTON MANUFACTURING CO.

TWO RIVERS • WISCONSIN



ARKETEX FOR *Budget Beauty*

Even the budget committee will like this fine tile for *the first cost is the only cost!* No periodic painting or refinishing of walls is necessary with Arketex. It is not affected by steam, water, ink, or the action of acids and alkalies which would ruin the appearance of ordinary walls. The everlasting colors are protected by a finish which won't mar, scar, crack, or craze, and which requires only soap and water washing to keep its luster. Arketex is a permanent wall and finish all in one, available in enough sizes, colors, and textures to allow the architect innumerable opportunities for variety. Be sure that buildings will maintain their orderly appearance years after construction. When planning schools, universities, hospitals, offices or factories, specify Arketex — first with the finest in ceramic glazed structural tile.

A Peacetime Promise

Arketex' continuous achievement in the ceramic glazed structural tile field assures you the finest in workmanship. Arketex . . . the standard of textured tile.

ARKETEX CERAMIC CORPORATION • BRAZIL, INDIANA

Schools for SKILLS

● The nation looks to colleges and universities for many of the essentials in modern progress. "Know how" and "reasons why" are provided men and women who prepare for a specific profession. And more is available for youth and the graduate student on the American campus. John Dewey recommends that young people be educated "with regard to the great social duties and prerogatives that await them in adult life."

And within the ken and concern of the institution and its students are skills required for living together in a friendly and civilized society, for mutual helpfulness "beyond the line of duty," for leadership in improving group human relationships. A salute, then, to schools for which more and more Americans will look for the higher skills needed in contemporary living.

Skills for SCHOOLS

● As schools forge ahead toward greater responsibilities, they may count on a pioneer fund-raising firm for counsel and help in a field requiring special professional skills. Just as the institution needs at times the professional competence of architect, engineer, and legal counsellor, there are special duties to be placed in the keeping of counsellors in institutional financing. Campaigns for funds require the balancing of factual and emotional elements . . expert timing . . capable selection and training of campaign personnel . . direction, organization and "follow through" to insure success. By a quarter of a century of experience plus daily familiarity with the newest techniques, the firm of Pierce, Hedrick and Sherwood is equipped to *help your plans succeed.*

Consult this firm for a preliminary analysis or for campaign-period service in all its phases or for long-term counsel in institutional financing and public relations. No cost is incurred by an inquiry along these lines or the firm's initial study of data.

Pierce, Hedrick & Sherwood
INCORPORATED
Counsellors in Institutional Financing
30 Rockefeller Plaza New York 20, N. Y.

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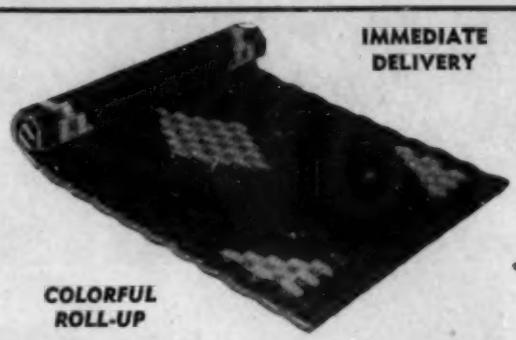

COLORFUL ROLL-UP

RUBBER LINK MATS

For entrances, inside and outside vestibules, lobbies, halls and corridors.

These mats have given up to twenty years' satisfactory service in hotels, hospitals, public buildings, institutions and apartment houses. Stock sizes 2' x 3' and 3' x 4' (½" thick). Made to order in any required size to specification. Reversible. Rough Corrugated Surface. Colors: Black, tile red, green, combinations.

Brushes • Mops • Waxes • Disinfectants

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HOW WOULD YOU ANSWER THE QUESTION

. . . WHAT IS THE BEST HEATING SYSTEM FOR OUR PARTICULAR NEEDS?

HERE IS A WAY OF DETERMINING THE ANSWER

If you want completely automatic control of healthful room temperatures with "overheating" eliminated; low operating and maintenance costs; simplicity and heating adequacy in all weathers—the answer is "Dunham Differential Heating". It may be installed in existing heating plants without replacing radiation, piping or boilers. Write for Bulletin No. 632. C. A. Dunham Co., 450 East Ohio St., Chicago 11, Illinois. 7-46

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VIA COLLEGE CHEMISTRY COURSES

TRAIN THEM WITH THE REAGENTS

INDUSTRY USES

MATURE, READY, scores of returning servicemen crowd college chemistry courses today. They are eager for education . . . anxious for training which combines theory and its practical applications to equip them best for a place in Industry.

IN YOUR LABORATORY, there is no better way to give them this training than with B&A Reagents, *the reagents Industry uses.* Working with these purity products of General Chemical Company's Baker & Adamson Division, students have at their command the same reagents that research and control chemists rely on for their most exacting analyses . . . the same reagents whose reputation for consistent quality, purity, and uniformity has been established in Industry since 1882.

THE B&A LINE is extensive, embracing more than 1,000 chemicals of C.P., Reagent, A.C.S., N.F., U.S.P., and technical grades. Many leading educational institutions have found it an excellent source of supply for all their chemical requirements year after year. You will, too!

FOR FULL INFORMATION, write now for 200-page book of B&A Products. We will be pleased to send copies for you and your Purchasing Department. Remember —when you order B&A Reagents . . . you give your students reagents they will *want* and *use* in Industry.

This little Gold Button is a familiar sight in college classrooms today. It is worn proudly by America's honorably discharged veterans. They have served their country well in war and now prepare to serve it well in peace.

Setting the Pace in Chemical Purity Since 1882

BAKER & ADAMSON *Reagent and Fine Chemicals*

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In Wisconsin: General Chemical Wisconsin Corporation, Milwaukee, Wis.

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Unlike surface finishes, Seal-O-San sinks in ...fills and seals every open joint and cell

SEAL-O-SAN not only keeps the surface clean, it makes certain that every wood cell *below the surface* remains clean.

A Seal-O-San finish becomes part of the wood. Penetrating deep, the liquid fills the empty cells, eliminating the *hidden* sources of dirt. Sealing the cells, it forms a protective finish that actually reinforces surface fibres. Thus, a Seal-O-San finished floor is covered with a *wear-resisting* seal that locks out dirt or moisture.

Moreover, the tougher Seal-O-San finish keeps dirt from piercing the surface and getting a foothold. It puts an end to cracks and crevices that harbor germs and dirt.

Seal-O-San leaves a beautiful, natural finish. And the ease of application—with a lambswool mop brings real labor savings.

Your insistence on *floor cleanliness* and *simple maintenance* will inevitably lead to Seal-O-San. Why not write for details—*now!*

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HUNTINGTON, INDIANA

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SEAL-O-SAN

PERFECT SEAL AND FINISH FOR WOOD FLOORS

Improved DEXTER

Improved GIANT

Your Generous Cooperation is Appreciated!

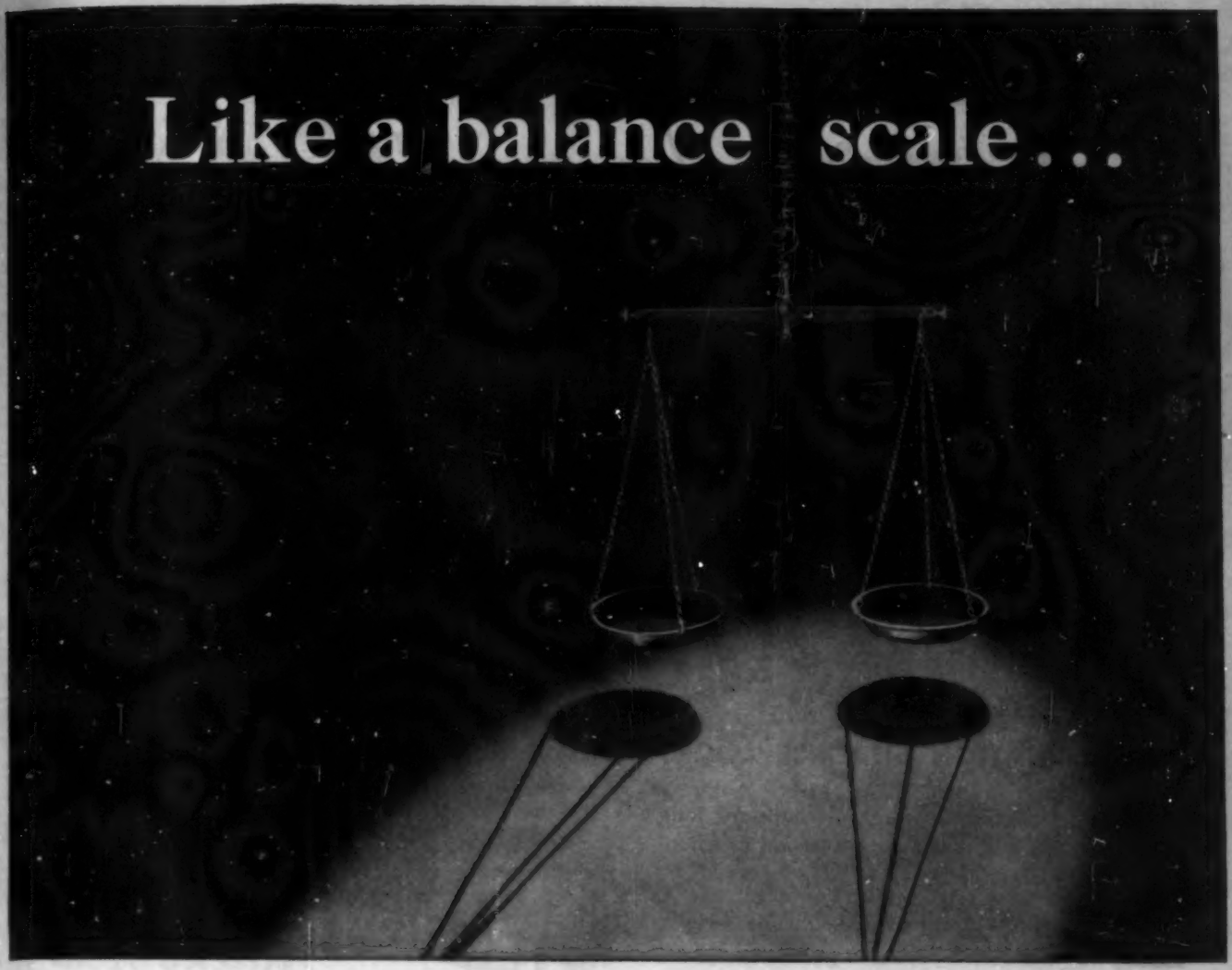
Never have there been times like these. Production and materials are on the increase . . . but DEMAND is unprecedented! Old customers of Automatic naturally have first call. Perhaps your request for Sharpeners has been among those we have been forced to defer. We want you to appreciate how sincerely painful this is to us. ● We earnestly hope that with the ever-increasing tempo of reconversion we shall have the pleasure of renewing your acquaintance.

Automatic Pencil Sharpener Co.
Division of Spengler-Loomis Mfg. Co.
58 E. Washington St., Chicago 2

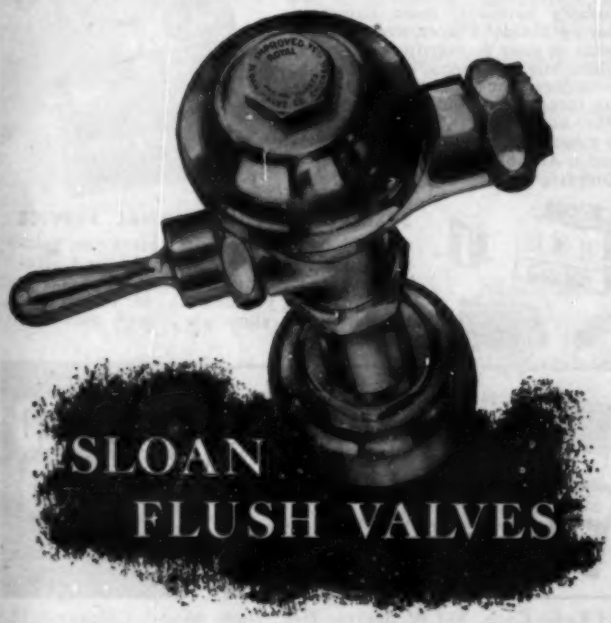
Points for Efficiency!

Automatic PENCIL SHARPENER

Like a balance scale...



The Royal never needs adjustment



Because there's nothing to adjust

The ROYAL is the *only* Flush Valve which has no adjustment or regulation. Its simplicity of engineering design, *plus* precision manufacture, insure accurate and lasting performance.

More than 4 million ROYAL Flush Valves are in daily service—including thousands of the first ROYALS installed over 36 years ago.

The ROYAL is "standard equipment" with discriminating builders and owners throughout the country. In fact, entire school systems, hotel chains, hospitals, industrial institutions, etc., use ROYALS exclusively.

For the best in Flush Valves specify Sloan—remember, there are more Sloan Flush Valves sold than all other makes combined.

SLOAN VALVE COMPANY
4300 WEST LAKE STREET, CHICAGO 24, ILLINOIS

maximum security

with

NATIONAL LOCK COMBINATION SHACKLE LOCKS

1. Designed and ruggedly built for long life and maximum protection to school lockers.
2. Heavy plated case — double weight, steel construction for protection against abuse.
3. Smooth operating, precision made lock mechanism, assures dependable service.
4. Heavy 5/16" diameter shackle. Black enameled dial with white numerals and graduations.

AVAILABLE IN TWO POPULAR STYLES

No. 68-265 (at right). A heavy duty lock, requiring three number dialing to open. When shackle is inserted into case, combination is disarranged and lock must be redialed to open. Dial is locked against rotation when shackle is open.

No. 68-264 (at left). Same top quality construction as above, except with master key feature. Student uses dial to open lock. Authorized custodian can gain immediate access to lock with master key.

Free LOCK RECORD BOOK

An attractive, durable, loose-leaf leatherette covered LOCK RECORD BOOK, containing charts for records of your Combination Locks, is available at no extra cost with each order of 100 locks or more.

NATIONAL LOCK COMPANY

Lock Division • ROCKFORD, ILLINOIS

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Your equipment needs are our business. Whether you require food service equipment, furniture, furnishings—a single item or a complete installation—the full facilities of our experienced designing and engineering staffs are available to you!

This complete service costs you no more. It is merely our way of satisfying the most exacting clientele in the industry. We take pride in the fact that we have succeeded in doing just that for over a century.

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• Glass • Silverware • Utensils • Furniture
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PENICILLIN SPEEDS CURE OF COLDS---

But... proper heating and ventilating may be more important to colleges and universities

There are two reasons why classroom ventilation is important in any building or modernization program. First, Architects, College Authorities and Scientists are agreed that nothing is more important to the health, comfort and general alertness of students and instructors than proper classroom air conditions. Second, experience has shown that installation of modern heating and ventilating equipment permits substantial reduction in fuel bills by eliminating unnecessary overheating.

There's a common sense approach to the classroom ventilating problem. That is to ask this simple question, "What equipment has proved . . . not only in theory but in actual usage . . . that it will provide proper classroom air conditions?"

Architects as well as College Authorities all over America will tell you that Herman Nelson Unit Ventilators are the answer. Thousands of installations have proved that these units provide superior results as well as greater operating economy.

It's only natural to expect more from Herman Nelson Unit Ventilators. They are manufactured by the Company which pioneered in the development of unit ventilators — the Company which has always maintained its leadership in this field.

Herman Nelson Unit Ventilator

Contact **THE NEAREST HERMAN NELSON PRODUCT APPLICATION ENGINEER OR DISTRIBUTOR.** He is trained and qualified to assist you in the solution of heating and ventilating problems.

THE HERMAN NELSON CORPORATION

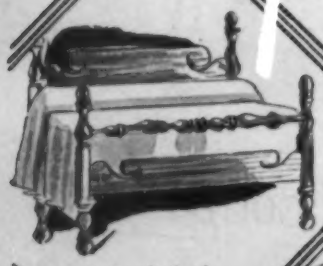
Since 1906 Manufacturers of Quality Heating and Ventilating Products

MOLINE, ILLINOIS

EVERYTHING FOR THE

Everything for Student Rooms

Write Us About Dormitory Furnishings



Wood Beds

Chest of Drawers

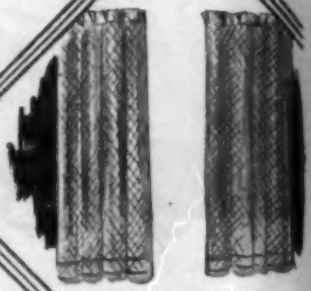
Tablet Arm Chairs

Innerspring Mattresses

Table Lamps

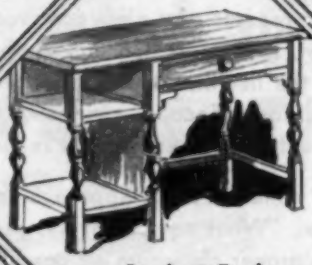
Desk Chairs

Dormitory Bunk Beds



Draperies

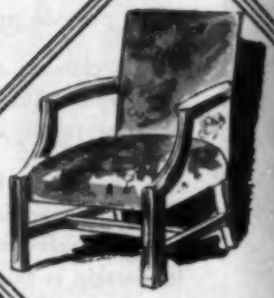
Mirrors for All Rooms



Student Desks

Wood Folding Chairs

Cafeteria Chairs



Lounge Chairs

You Are Always Assured Lowest Prices Established 1899

Make Us Your Headquarters for Housing and Sleeping Equipment

Clark Linen & Equipment Co.

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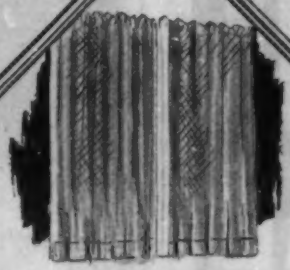
Phone: Miami 7-5781

SCHOOL OR COLLEGE

Write Us About Any of Your Furnishing Problems

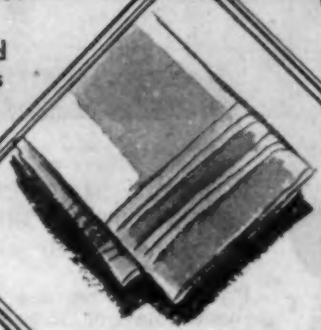
Everything for School and Student Housing

Asbestos Lined Waste Baskets

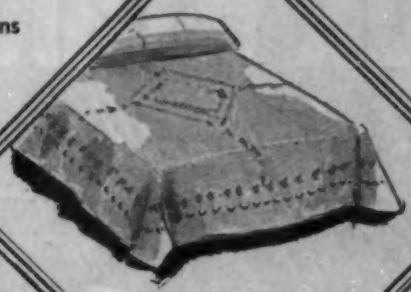


Glass Curtains

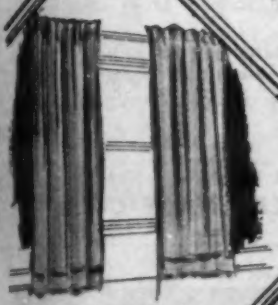
Floor Lamps



Hand Towels



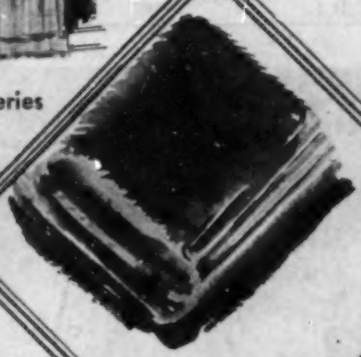
Bed Spreads



Colored Draperies

Bed Sheets

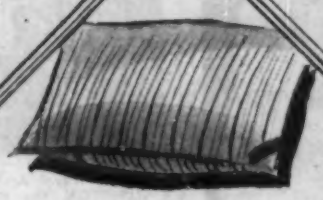
Pillow Cases



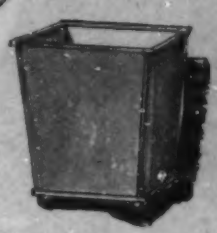
Wool Blankets

Shower Curtains

Turkish Towels



Bed Pillows



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With
PYRA-SEAL

Floors wear out for two reasons . . . (1) from abrasion on top caused by the grinding of foot traffic . . . and (2) from deterioration underneath the surface—rotting caused by moisture seepage. Some floor seals protect against either one of these floor destroying agents . . . but PYRA-SEAL protects against BOTH. It's DOUBLE protection for your floors.

PYRA-SEAL is a product of laboratory science, developed by Vestal to conquer floor wear from ANY source. It dries to a hard, lustrous, beautiful and long-wearing finish for surface protection. It seals the pores in the floors for protection underneath.

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Shades are mounted to a heavy gauge steel shield

Offset brackets give shades 6" overlap

THERE IS A DRAPER DARKENING SHADE FOR WINDOWS OF ANY TYPE OR SIZE

X-L For extremely wide and multiple windows.

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There are more Clarin steel folding chairs in institutional service than any other make

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Medart—for seventy-three years—first in gymasium equipment. A reputation which Medart has justly earned by quality products, *proved in use,* in schools and colleges throughout the country. No wonder forward looking institutions *look* to Medart for leadership ... not only in the excellence of quality standards... but also in the pioneering of new and progressive ideas!

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THE Acromat* -TRAMPOLIN

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Designed to give your physical education curriculum a new interest ...a lift! To be used as part of your physical education program and as a separate recreational activity. Adaptable to all age groups ...with maximum flexibility for use in any gymnasium. Write for full particulars on the Medart ACROMAT*-Trampolin, now...and be ready for your 1946-47 Physical Education Program.

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Manufacturers of Gymnasium Equipment... Basketball Backstops...Gymnasium Seating...Steel Lockers... Lockerobes (Steel Wardrobes for Elementary Schools)... Write for Catalogs.

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IN the American Envoy Tablet-Arm Chair No. 378 are combined all the seating features most important for your students—and you.

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You can find everything you need in schoolroom furniture in "American's" complete line. Our expert Seating Engineers are ready to help you solve your seating problems. Write today for information.

Universal Table and American Envoy Chairs No. 368

American Seating Company

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WORLD'S LEADER IN PUBLIC SEATING

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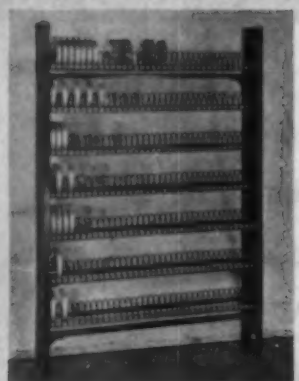

FILM RACKS Model RK-250

Holds 250-400 foot reels. Each reel held erect in its own card-indexed holder by rigid curved rod separators 10" deep, 72" high, 48" wide. Cross braced front and back. Rear braces drilled for mounting to wall or another unit. Closed end uprights. Overall size 10" deep, 72" high, 48" wide.

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Units for any capacity and any size reels assembled on order to meet your specific requirements. In ordering, give any space limitations.

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For cabinet, bookcase, table or shelf installation. Complete with mounting brackets. Available for 400, 800, 1200 and 1600 foot reels.

NEUMADE also offers a complete line of more than 50 all steel enclosed film cabinets. Shown at right is Model MM-102.

NEUMADE NO. 1 REWIND AND EDITING BOARD

Complete with two geared end 2000-ft. rewinders, Griswold splicer, cement, holder and applicator mounted on white enameled panel 40" long, 13" wide.

Write today for free catalog and prices on 16 mm. equipment. A similar line of products is also available in 35 mm.

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dormitory
furnished . . . by SIMMONS

TWO HAPPY "BADGERS" LIVE HERE . . .

Great school—beautiful campus—lovely new dorm . . . *and furniture by Simmons!* What more could a co-ed want?

And what more could any furniture buyer want than pieces with the color, durability and style of this new Simmons all-metal grouping?

Here is real flexibility, too, for you may choose whatever items you require . . . to fit space and budget. Be sure to see the new postwar Simmons line—and notice its *prewar* quality! Test it for comfort, check into its economy features. Then you'll know why so many men's and women's dorms in leading schools everywhere are featuring furnishings . . . by Simmons!

Illustrated: *One of the 500 Simmons-equipped rooms in the new Elizabeth Waters dormitory for girls, University of Wisconsin.*

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DORMITORY DIVISION

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A MEMORIAL THAT *Lives*

. . . IN THE HEARTS OF THE ENTIRE STUDENT BODY

Installed in the belfry of the chapel, the tower of the library or a hall, or in a specially designed Memorial Bell Tower, a Deagan Carillon becomes the voice of the campus . . . a voice of surpassing grace and celestial beauty that reaches deeper and deeper into the hearts of the student body.

The daily programs of stately bell music are refreshing interludes in the routine of student life. The quarter-hour peal is a campus time guide. As the voice of the school, the bells give expression to all of the school's activities.

Because of the carillon, the graduate's memories of his Alma Mater are enriched and inspired. Throughout his life student days are associated in his mind with the lovely melody of genuine bells.

What form of Memorial could be more appropriate, practical and effective? May we send you details?

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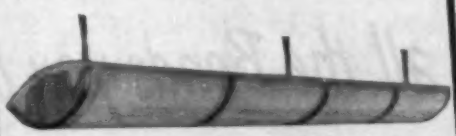
NOW YOU CAN "Hang the Sky" TO HELP THEM SEE BETTER

Over-ALL Lighting

by Wakefield

Let the STAR give them "a sky" of easy-eye light!

Designed to meet your problems, the STAR gives you all the benefits of fluorescent and of indirect light. Proved Plaskon shielding. Simple, sturdy construction. Easy maintenance; unusually simple to handle and clean . . . just slide out Plaskon reflector section. The ideal unit for Over-ALL Lighting in many college classrooms.



It's new—THE WAKEFIELD STAR

A new approach to classroom lighting for greater eyesight protection

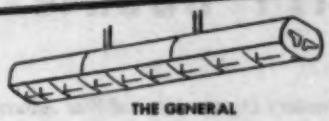
Wakefield's new Over-ALL Lighting provides smooth, pleasing, diffused light *over all*—the kind of light that eyes need for easy seeing, that makes for more attentive students, for easier teaching, and for cheerful, fresh, up-to-date rooms.

And we think you'll find this new system has it *over* all others when it comes to efficiency, seeing comfort, and protection against eyestrain fatigue. Because Wakefield Over-ALL lighting is based on definite lighting results.

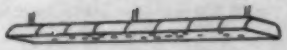
Ask your local Wakefield distributor to tell you more about this new Over-ALL lighting. Or write for new booklet. The F. W. Wakefield Brass Co., Vermilion, Ohio.

Wakefield

LIGHTING EQUIPMENT FOR OFFICE, SCHOOL AND DRAFTING ROOM



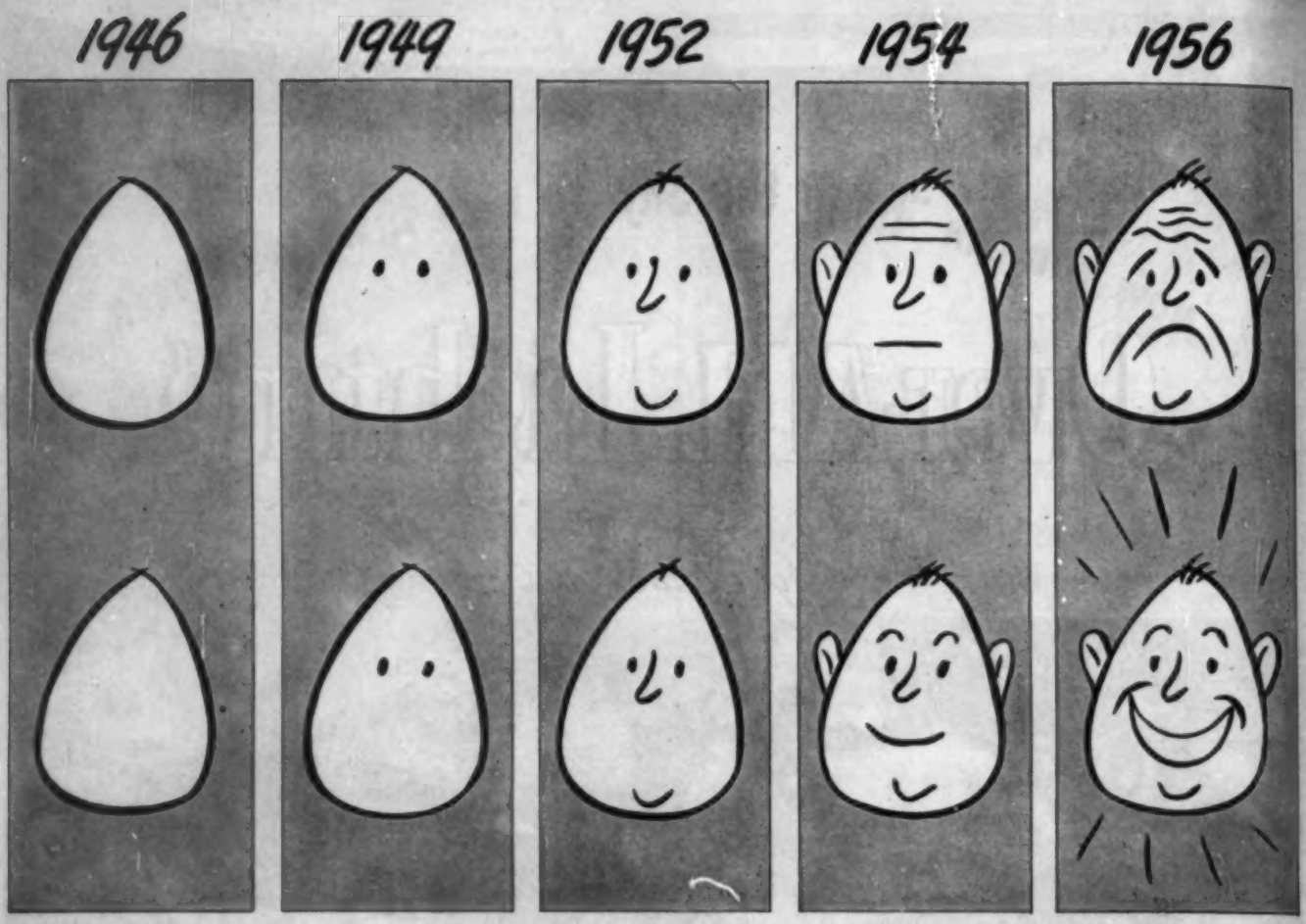
THE GENERAL



THE GRENADIER

THE COMMODORE

THE DIPLOMAT



Two ways your face can grow in the next few years

USUALLY, our faces show what's happening to us. For instance, suppose financial matters are constantly on your mind.

Suppose you know that there's practically no cash reserve between you and trouble.

It would be surprising if your face didn't show it.

But suppose that, on the contrary, you've managed to get yourself on a pretty sound financial basis.

Suppose that you're putting aside part of everything you earn . . . that those dollars you save are busy earning *extra* dollars for you . . . that you have a nest egg and an emergency fund.

Naturally, your face will show *that*, too.

There's a simple and pretty accurate way to tell which way your face is going to go in the next few years:

If you are buying, regularly, and holding as many U. S. Savings Bonds as you can, you needn't worry.

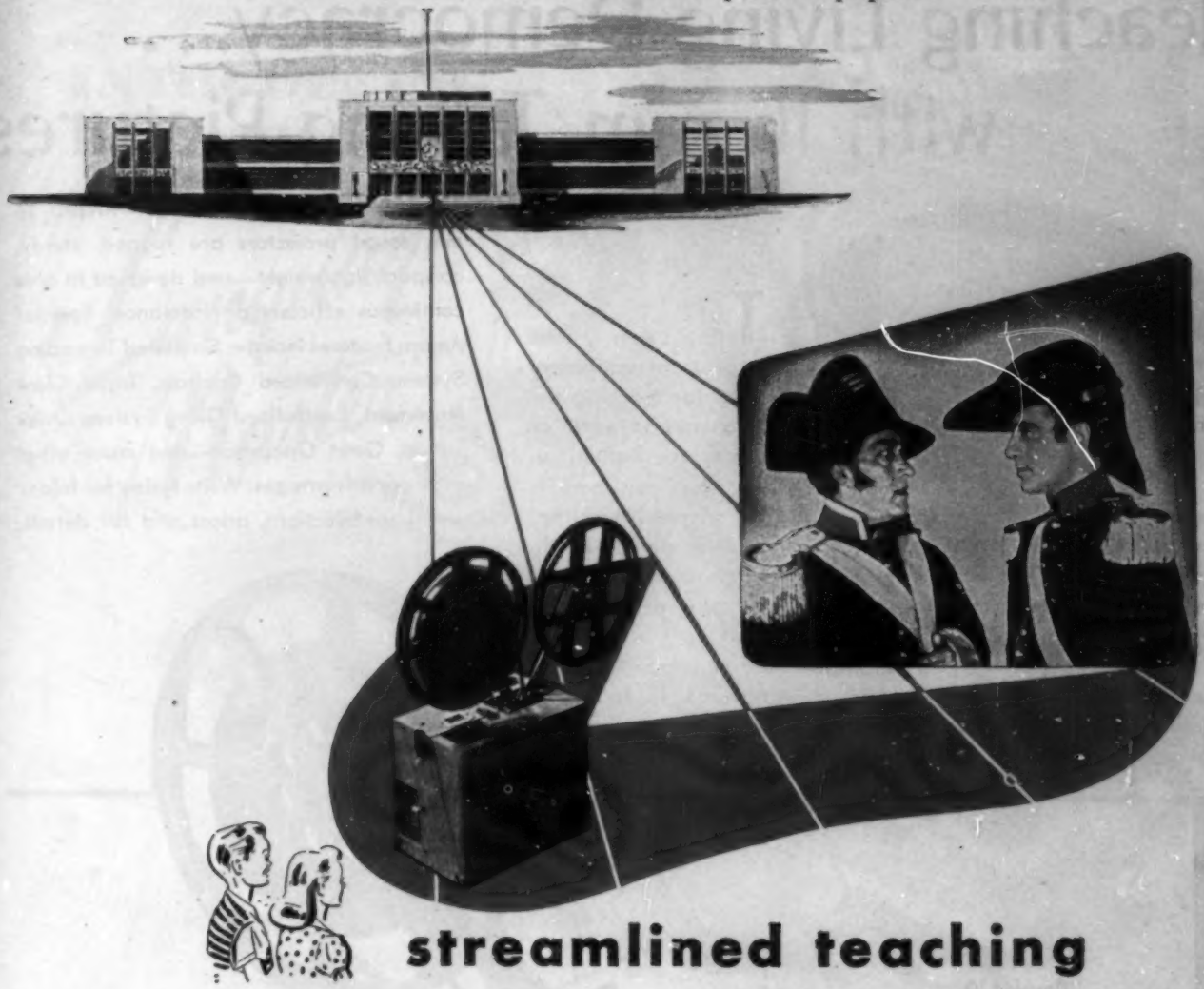
Your face will be among the ones that wear a smile.

Buy all the Bonds you can... keep all the Bonds you buy

COLLEGE AND UNIVERSITY BUSINESS

This is an official U. S. Treasury advertisement—prepared under auspices of Treasury Department and War Advertising Council

VICTOR . . . the best in 16 mm motion picture equipment



streamlined teaching

Thousands of educational films available for your use

The light of learning today burns brighter as whole new worlds of science, history, geography come to life on the 16mm motion picture screen. Hidden secrets are laid bare to the eyes of students through the magic of 16mm films and equipment.

As pioneers in visual education equipment, Victor Animatophones are specifically designed for portability, easy operation, and simplest maintenance to meet your need.

Write today for descriptive literature and name of nearest distributor.

THINGS TO THINK ABOUT WHEN BUYING A PROJECTOR

STRAIGHT-LINE BEAM

VICTOR'S projector lamp and lenses are permanently aligned and prefocussed at the factory . . . cannot get out of alignment, and insure maximum brilliance of the image on the screen. Also investigate VICTOR'S Safety Film Trip, and truest Sound Fidelity.

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Teaching Living Democracy... with 16 mm. Talking Pictures

Today — in a chaotic world, there is an urgent need for teaching the meaning and worth of democratic institutions. Educators say there is no better way of doing this than through 16 mm. sound films that bring living demonstration to words — that show democracy in action. Modern audio-visual aids are more than a means of increasing fact retention . . . they are the ideal means of creating a real understanding of social relationships.

. . . in this task of bringing the world to the classroom, the new Amprosound 16 mm. projectors offer many advantages. To appreciate the great strides made recently in 16 mm. sound projection — ask your Ampro dealer for a *demonstration* today!

Many Special Ampro Features — Ampro 16 mm. sound projectors are rugged, sturdy, compact, lightweight — and designed to give continuous efficient performance. Special Ampro features include: Simplified Threading System, Centralized Controls, Triple Claw Movement, Centralized Oiling System, Quick Set-up, Quiet Operation — and many other exclusive advantages. Write today for folder giving specifications, prices and full details.

"Premier 10" the new Ampro 16 mm. Sound Projector

The Army-Navy "E" has been awarded to Ampro for excellence in the production of 16 mm. motion picture projectors.

AMPRO

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AMPRO CORPORATION ★ CHICAGO, 18

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INTRODUCING THE FAIRCHILD *Language Master*

any phrase repeated again and again—*instantly!*

Language study becomes exciting . . . alive . . . easy—with the new Fairchild Language Master. It's a word spotting playback machine. Any word, any phrase on a record can be located instantly and repeated endlessly until mastered fully. How? By a simple dial reading and a simple lever setting.

Instructors can chart language records to dial readings. Or where record-making equipment is available, instructors may make recordings especially adapted to class needs. The result? Complete language mastery—in the shortest possible time.

The Fairchild Language Master is self-contained, attractively cased. The 110-120 AC on-off switch, volume control and illuminated 'spotting' dial are conveniently grouped on the turntable panel. The amplifier-speaker unit is mounted in the removable, cable connected cover. This permits the speaker to face the class while the turntable, dial and spotting lever face the instructor at his desk. Or, the playback may be connected to any independent amplifier or used with head phones for individual quiet study.

In addition, the Fairchild Language Master—which is priced within range of both classroom and student ownership—can simplify the teaching of musical theory, appreciation and history. For information address: 88-06 Van Wyck Blvd., Jamaica 1, New York.

Fairchild CAMERA AND INSTRUMENT CORPORATION

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Write *Time-Tested* Security into LOCKER Specifications

RD2 P570

Experienced school executives for over 25 years have specified dependable Dudley Locks for lockers, "lab" equipment, desks and cabinets in new and replacement installations.

Available in keyless and master-keyed shackle and built-in types, they simplify administrative problems. Stubbornly resistant to picking and forcing, they provide maximum protection against pilferage.

Built on basic patents with many exclusive features, precision-made Dudley Locks operate smoothly throughout their long service life. Ask your Dudley representative for complete details on the types best suited to college and university use . . . or write us direct.

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LOCK CORPORATION

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1. **TAKE A LOOK AT YOUR PRESENT LABORATORIES—** If they're cluttered with inefficient furniture . . .
2. **TAKE A LOOK AT YOUR SCIENCE STUDENTS' GRADES—** They may reflect the difficulties of working with poorly integrated equipment. Then . . .
3. **TAKE A LOOK AT KEWAUNEE MATCHING UNITS!—** You'll quickly see how the greater convenience and efficiency of Kewaunee Matching Units give your students every opportunity to do their best work.

Kewaunee Matching Units, in standard sizes and finishes, are designed and built in Kewaunee's own plant on a mass-production basis. Merely combine the units you need and you have "custom-built" laboratories at ready-made prices. Working surfaces are of KemROCK for successful resistance to acids, alkalies, solvents, abrasion, physical and thermal shock. So why not "take 3 looks" today? Then send for your free copy of Kewaunee's new 94-page book. Gives floor plans, specifications and arrangements for High School and Junior College laboratories. Address:

EDUCATIONAL DIVISION

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TELKEE

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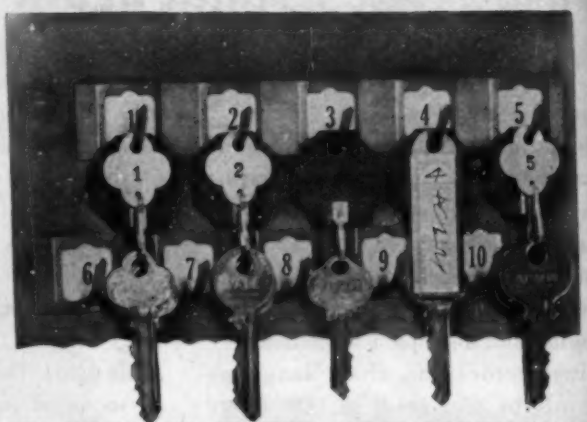


VISIBLE KEY CONTROL

A complete indexing system for the care of keys:

1 **TELKEE** is a tried and proven Visible Key-*Filing*—Key *FINDING* System.

2 Whether there are a few keys or thousands of keys — **TELKEE** is simple and effective.

3 It is the perfect system for knowing your keys — knowing where they *are* when you want to use them.

4 **TELKEE** retains a Reserve-Pattern key — never loaned. Tells you to whom other keys have been loaned.

5 Your keys are identified only by the special **TELKEE** Cross Index — Positive Control.

6 New instruction booklet based on 14 years' experience makes **TELKEE** easy to set up and operate.

WRITE DEPARTMENT "A" FOR INFORMATION

P. O. MOORE, Inc.

302 Fourth Ave. New York 10, N. Y.

"SPLIT-CORRIDOR" TEST

PROVES FLOORS STAY CLEAN UP TO 30% longer!

If you want to know which floor treatment will wear longest, there's an easy way to tell. Laboratory wear tests give a clue . . . but the simplest, most convincing proof is the answer to the question, *How long will it keep the floor clean?*

Day-by-day service in hundreds of office buildings, hotels, hospitals and schools have repeatedly demonstrated the fact that with non-slippery Car-Na-Lac and Continental "18", floors stay clean up to 30% longer. Uniquely processed to adhere to the floor, these quality floor treatments become "welded" to the floor and prevent tracking off. Built to wear longer, they provide a hard, non-tacky finish that resists grinding in of dust and grime . . . the dirt stays on the surface until removed by sweeping.

Use Car-Na-Lac or Continental "18"! You'll find, as most maintenance men know, that the best treatment is the one that lasts the longest . . . is cheapest in the long run. Fewer applications are required, resulting in a double saving: (1) overall material costs are reduced, (2) less manpower is needed to apply the treatment.

Want proof? Make the "split-corridor" test, below.

CONTINENTAL CAR-NA-VAR CORP.

1635 E. National Ave. **Brazil, Ind.**

Specialists In Heavy Duty Floor Treatments

MAKE THIS TEST

Order a 55-gallon drum of Car-Na-Lac or Continental "18" floor finish — whichever you prefer—from your local Car-Na-Var floor maintenance representative . . . or from the factory direct. On arrival, apply floor treatment to one-half of any corridor or floor you choose. For comparison, apply brand formerly used to balance of area. See for yourself that the part treated with Car-Na-Lac or Continental "18" floor finishes stays clean up to 30% longer. If you are not completely satisfied, return unused portion for full credit.

CAR-NA-LAC
TRADE MARK REG. U.S. PAT. OFF.
LACQUER-LIKE FLOOR FINISH

Acts like a lacquer made of wax. Applied with the usual wax applicator. Levels out as it dries, resulting in a uniform, streakless, lacquer-like gloss. Self-polishing . . . dries in 15 to 20 minutes. Car-Na-Lac floor treatment has at least twice the wearing qualities of ordinary water waxes and is waterproof, non-slippery. Adapted for all floors except unsealed "raw" wood. *Meets Proposed Federal Specifications for Item 9, Type 1.*

AND

CONTINENTAL "18"
TRADE MARK REG. U.S. PAT. OFF.
THE SUPER FLOOR FINISH

The same as Car-Na-Lac except that it contains about 38% more solids. Heavier solid content gives a higher gloss and reduces number of applications. Covering capacity averages the same as Car-Na-Lac, but one coat does the work of two. Recommended by a leading national casualty insurance company for safety. *Meets U. S. Treasury Specifications for "Finish Material" (and Proposed Federal Specifications for Item 9, Type 11).*

WHAT'S NEW. . . . . .

The easiest way to get more information about the new products described in this section is to use the postage paid card opposite page 41. Just circle the key number on the card which corresponds with the number in the headline of each item. COLLEGE and UNIVERSITY BUSINESS will send your request to the manufacturer.

Accounting System — CUB 1

Reduces Cost, Saves Time

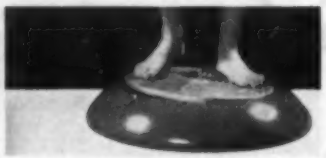
The institution's business organization will be interested in Multi-Matic Accounting, an entirely new system of accounting and pay roll preparation, developed by the Systems Division of Remington Rand, Inc. In comparing it with conventional bookkeeping methods, users report savings of 40 per cent in cost and up to 66 per cent in time.

The basic principle of Multi-Matic Accounting is the simultaneous posting of a number of financial or statistical reports by means of a single writing, the patented Multi-Matic Accounting Board permitting the same entry to appear in a number of different columns on separate reports. A single writing, for example, prepares pay checks, employes' earnings, history records and the pay roll register and ensures that identical entries will be correctly distributed to the proper columns of the check stub or voucher, pay roll register and employe's ledger card.

The new system is unique in that it provides a daily and period to date financial statement with proved balances of totals and of each operating account and yet it requires no skilled accounting help.—*Remington Rand, Inc., Systems Division, 315 Fourth Avenue, New York 10, N. Y.*

Athlete's Foot — CUB 2

Prevented or Treated by New Dispenser



The Peda-Spray Dispenser and Solution, both a preventive of and a treatment for athlete's foot, is now available. The base of the dispenser contains Peda-Spray Athlete's Foot Solution which is vaporized through a grille by means of three pumps. The user stands on a grille that is mounted on a center spring and as he moves his weight from side to side in a one-two-three tempo, the grille activates the pumps.

Laboratory assays and practical tests have proved Peda-Spray Solution a complete prophylaxis against athlete's foot (Tinea trichophytina); it can be applied in three seconds. The solution is nonirritating and nonburning.

Each Peda-Spray Dispenser is sold under a twenty year guarantee against mechanical failure as long as Peda-Spray Solution is used. Average treatments per gallon are 3200.—*Peda Spray Company, Inc., 55 West Forty-Second Street, New York, N. Y.*

Fixed Seating — CUB 3

In Auditoriums Is Said to Be Trend

The trend is toward installation of modern, fixed seating in college auditoriums, the American Seating Company finds from reports received from all sections of the country. Increased comfort and the attraction a comfortable auditorium holds for every type of audience are the reasons usually given. Said to be typical of the fixed seating now being installed is the company's redesigned Bodiform auditorium chair which is contoured to the human body.

The chair has been streamlined to give modern styling to the construction which features arch springs, concealed hinges and practically indestructible frame. Seat and back are designed for quick removal, when necessary, to permit replacement of covering material in a few minutes' time. The seat is formed from a single steel sheet, with no protruding corners or edges and, when the occupant rises, the seat folds automatically to a three-fourths fold. As in all previous Bodiform chairs, the new model is made without tacks or bolts and there are no exposed screws.—*American Seating Company, Grand Rapids, Mich.*

Microfilming — CUB 4

An Aid to Business Administration

Microfilming simplifies the task of keeping records, for it provides quick reference, inexpensive duplication, compact storage and maximum protection. "50 Billion Records Can't Be Wrong," a new booklet which tells the story of microfilming, has just been released by the Recordak Corporation, subsidiary of Eastman Kodak Company which

first introduced the process in a New York bank in 1928.

Recordak models are available on a rental basis only, and installations include a companion film reader which projects films for reference. There is a microfilming service which aids organizations whose volume of work does not require their own installation.

The booklet explains how the general run of business documents, such as letters, reference cards and reports on single sheets, up to 14 inches in width and unlimited in length, are photographed on 16 mm. film. For microfilming bound volumes and large drawings, charts and diagrams, 35 mm. film is used in Micro-File Recordak equipment; these units come in floor and table models for fixed installations and in a portable model for field use. Companion film readers for viewing 35 mm. microfilm include a floor model and a portable projector for field use. The Recordak Enlarger makes facsimile prints of drawings and documents on the spot.

Special Recordak microfilming services are described at the close of the book. In addition to the microfilming service previously mentioned, they include the Facsimile Service which provides paper prints of lengthy reports, card files, and other business records in any quantity, and the Recordak Field Service which provides consultation and advice for adapting microfilming to all kinds of accounting, record storage and business systems— *Recordak Corporation, 350 Madison Avenue, New York, N. Y.*

Rotary Mower — CUB 5

Simplifies Maintenance of Lawns

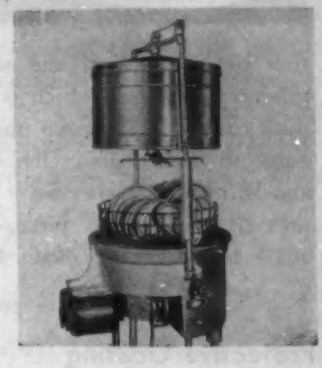
Well kept lawns usually associated with the college campus require back-breaking effort that is almost completely eliminated by a 30 inch power lawn mower soon to be marketed under the trade name of the Roebling Rotary Mower. Completely new in design and principle, this mower will cut and trim a lawn in one combined operation; it will cover half an acre an hour.

Horizontal blades, whirling at high speed, reach to the edge of posts, trees, fences and other obstructions, the rotary action being similar to that of two electric fans placed side by side and face down over the grass. The four cutting blades are of tough, heat treated, shatterproof steel, double edged for double duty. They are easy to remove, sharpen and replace. In line with recommendations of leading agronomists against excessively close mowing, the cutting heights of the blades are adjustable from 1¼ to 2½ inches. The blades snip the grass into fine trimmings which spread evenly to form a mulch said to be desirable for vigorous root growth. Wheels are placed back of and well inside the path of the cutting blades, eliminating grass matting and overlapping runs.

Walter Dorwin Teague, industrial designer, styled the machine which is delicately balanced for easy control, fingertip steering and effortless operation. Whenever the handle is released, an automatic clutch disengages the wheel drive and the blades from the idling motor, thus ensuring safety, and the motor can be started only when they are disengaged. The mower is compact in size, comparatively light in weight, and the handle can be collapsed and easily folded for winter storage or for transportation.—*John A. Roebling's Sons Company, Trenton, N. J.*

Pre-Dishwasher — CUB 6

Expedites Cafeteria, Dining Room Operation



As in all operations, organization is said to be the secret of success, and readying dishes for washing is a major operation in the cafeteria or dining room. Colleges, therefore, will be interested in the new Jackson Pre-Dishwasher which can be used with any type of dishwashing machine. This new member of the Jackson dishwashing line presoaks and washes away adhering food particles which are retained in a basket at the bottom of the machine for quick disposal; in addition, there are two strainers in the machine. The unit is compact, sturdily constructed and said to be simple to operate and install. It accommodates a large number of dishes and requires only a moment for prewashing.—*Jackson Dishwasher Company, 3703 East Ninety-Third Street, Cleveland, Ohio.*

Concrete Floor Coating — CUB 7

Withstands Action of Lime and Moisture

Now that chlorinated rubber supplies are back, Truscon Paratex concrete floor coating is once more available. Prior to the development of chlorinated rubber as a paint vehicle a few years before World War II, no paint had been successful in withstanding the action of lime and moisture in concrete. Lime, which is present in every concrete surface, in some types of brick and in the mortar used for cementing the brick, is harmless enough until in contact with moisture. The combination is active chemically and, therefore, usually ruins paint, especially that on cement floors constructed at grade level or below grade.

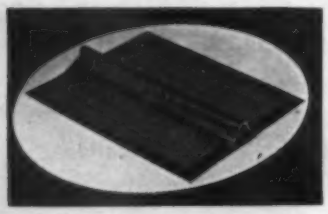
The substitution of a rubber type of base in paint for the customary oleo-resinous base consequently is a revolutionary step. Vegetable oils react with lime and

moisture forming a soapy mess; rubber resin in paint does not form a soap with lime. As a result, the Paratex floor paint represents a great advance in the concrete floor paint field.

In addition to its use as a concrete paint, Paratex is adaptable also to steel protection.—*Truscon Laboratories, Inc., Caniff and Grand Trunk R.R., Detroit 11, Mich.*

Stair Treads — CUB 8

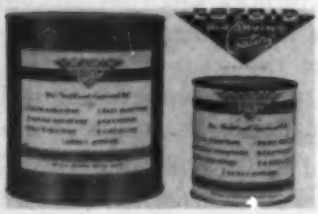
Protect Step and Riser Against Wear



A new exclusive idea is embodied in the Double-Duty Stair Tread which offers protection to both the step and the riser. This new tread protects the step against foot traffic and the riser against kicking and scuffing. Two sizes are being produced. The one which is 18 inches wide and ⅛ inch thick covers a 9 by 18 inch tread plus 7 by 18 inch riser, all in one piece; the one which is 24 inches wide and ⅛ inch thick covers a 9 by 24 inch tread plus 7 by 24 inch riser, all in one piece.—*American Mat Corporation, 2018 Adams Street, Toledo, Ohio.*

Protective Coating — CUB 9

Solves Corrosion Problems



Cotoid, a new protective coating highly resistant to acids, alkalies, chlorides, oils, brine, oxygen, gasoline and alcohol solutions, solves the corrosion problem. A recently developed formula based on synthetic resin, a thermo-plastic, this product has low water absorption and inert properties which inhibit corrosion.

Application by spraying is recommended, but it can be applied by dipping, flowing or roller coating. A tough, hard, elastic finish results which, after air or force drying, is tasteless and odorless. Cotoid will withstand a maximum temperature in air or vapor of 220° F., maximum submerged temperatures approaching 150° F., and it will not crack under temperatures as low as minus 20° F.

Cotoid has been found practicable for protecting walls, wood or steel structural work and can be used for coating inside and outside surfaces of concrete, steel or wooden tanks used for corrosive solutions, brines and alkalies. It has been laboratory tested and approved for use with a wide range of acids, gasoline, sour crudes and lye solutions.

The product is packaged in 1, 5 and 10 gallon cans and in 55 gallon drums. A specially prepared Cotoid for baking-on process is available.—*Lithgow Corporation, 333 West Fortieth Place, Chicago 9, Ill.*

Air Freshener System — CUB 10

Combats Odors, Improves Air Quality

It is now possible to control odors indoors by means of improved equipment for the application of Airkem Chlorophyll Air Freshener: the Osmetrol System. Model PE, pictured in the accompanying illustration, is a portable unit for buildings without air conditioning; Model AE is engineered for application to all types of central systems or for use with packaged, self contained, air conditioning units or ventilating systems.

Evaporated at the recommended rate, Airkem releases in the air two groups of volatile substances, each having a distinct function in improving air quality. One acts directly to counteract unpleasant odors; the other includes certain green plant extractives (commercial chlorophyll) which, released at concentrations so low as to be unnoticeable as such, contribute to an odor undertone said to be suggestive of the freshness of outdoor air.

As applied in the portable unit, the Osmetrol System contains means for pumping liquid Airkem from a reservoir, vaporizing it in a special cartridge and then dispersing it throughout the space to be treated by means of a built-in motor-driven fan. All that is necessary for operation is to plug the electric cord into an A.C. outlet; portable units for D.C. operation are supplied on order. The unit is 14 inches square, 32 inches high and made of 18 gauge steel with a crinkle enameled finish. It is mounted on swivel casters and has handles so that it can be moved quickly and easily to any location where odor conditions need correction.

Model AE is easy to apply to either central systems or packaged, self contained, air conditioning units.—*W. H. Wheeler, Inc., 7 East Forty-Seventh Street, New York 17, N. Y.*

Electric Ranges — CUB 11

Can Be "Made to Order"

Electrical commercial ranges, which formerly were constructed of either "black metal" or stainless steel throughout, are now being "custom-built mass-produced" with stainless steel "in the parts specified" by Hotpoint-Edison, according to Grant Call, manager, electric cooking equipment division, Edison General Electric Appliance Company. The trend toward "visual to the public" kitchens calls for stainless steel but, when this metal is used throughout, the cost is considerably higher, it is explained. Stainless steel panels and other parts of ranges will now be supplied to dress up the parts of the device exposed

to public view, according to Don V. Irvine, sales manager of the installation equipment group. Under the manufacturing innovation, the amount of stainless steel finish desired can be specified with the cost based upon the amount of the higher priced materials, it is pointed out.—*Edison General Electric Appliance Company, Inc., 5600 West Taylor Street, Chicago 44, Ill.*

Aluminum Awnings — CUB 12

Offer Low Cost Protection, Controlled Light

Sagging, shrinking and stretching, afflictions common to some types of awnings, are eliminated in "Alumaroll" which, however, retains the canvas awning's desirable feature of rolling up into a neat compact roll at the top of the window. This new product, made of 100 per cent noncorrosive aluminum, is said to provide increased ease of operation, attractiveness and durability; its installation may add character and refinement to the windows and entrances of campus buildings. The awnings are finished in a protective coat of baked aluminum enamel and are available in a range of colors to harmonize with any building exterior. Freedom from fading, ripping and mildewing is emphasized, as are the facts that these awnings will not chip, rust or rattle.

In regard to the cost angle, it is emphasized that the original cost is the only cost during a long, maintenance free life of service. They provide full ventilation as well as any degree of shade the year round. Another feature is one of safety; because they are completely fireproof, there is nothing to burn. In summer they keep building temperatures down, thus relieving air conditioning systems; in winter they can be easily rolled up to allow the winter sun's heat to ease the heating system's load.—*Aluminum Awning Company, Division of Orchard Brothers, Inc., 499 Meadow Road, Rutherford, N. J.*

Bookstack Brochure — CUB 13

Provides Aid for Small, Large Libraries

The Breeze Bookstack Brochure offers a helpful collection of information to those considering a new library or expansion of the present one. Problems from the housing of special library reference works to multiple units for the storage of archival records and large book collections are covered in the catalog. Accessories, too, are described as are problems of ventilating and lighting, bookstack finishes and proper use and disposition of metal equipment. Individual and group study requirements are discussed and standard dimensions and basic engineering data provided.—*Breeze Corporations, Inc., 41 South Sixth Street, Newark 7, N. J.*

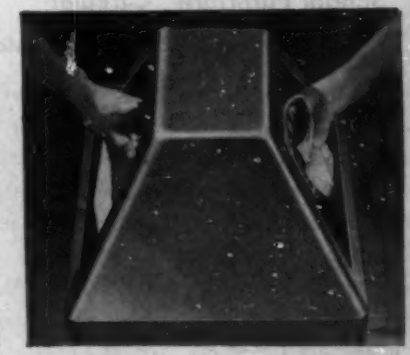
New Model Washfountain — CUB 14

Features Modern Design, Sanitary Service

In line with the demand for better health control measures, the Bradley Washfountain Company has added a new model to its line of products, the Duo-Washfountain. A foot treadle controls the spray thereby requiring hands to touch nothing but clean running water; a self-flushing deep bowl prevents collection of dirty contaminated water. Modern in design, the Bradley spray head replaces four faucets and enables two persons to be served at one time. The number of piping connections has been reduced, saving space and simplifying maintenance. The bowl is furnished in either stainless steel or white enamel iron with similarly finished pedestal panel which encloses the connections and mixer.—*Bradley Washfountain Company, North Twenty-Second and West Michigan Streets, Milwaukee 1, Wis.*

New Waste Receptacles — CUB 15

Help to Keep Buildings, Lawns Orderly



Bennett Bilt Waste Receptacles provide an economical, healthful method of assuring cleanliness and neatness in buildings and on campus lawns. The receptacles are fabricated from heavy gauge steel and are reinforced by rounded corners for durability; welded construction gives a smooth exterior surface and thus eliminates "clothes catching" hazards.

The two doors are hinged independently so that both can be opened simultaneously and rubber bumpers assure quiet closing. The doors are kept constantly closed by means of heavy tension springs which eliminates the need for placing the receptacles on perfectly level floors or stands. As a result, the receptacles are fireproof as well as sanitary.

The receptacles are available in six graduated sizes in olive green or white finish. The larger sizes have fabric bags to facilitate removal of waste. The largest model is designed and finished especially for outdoor use.

A fully illustrated catalog can be obtained from the manufacturer.—*Bennett Manufacturing Company, Inc., Alden, N. Y.*

Toilet Rooms — CUB 16

Catalog Describes Colors and Finishes

The new 20 page, six color catalog of the Sanymetal Products, Company, Inc., manufacturer of toilet compartments, shower stalls and wainscoting, will facilitate the planning of toilet rooms in new buildings or the remodeling of facilities in present buildings. Fifteen standard colors are used in Sanymetal toilet compartments, shower stalls and wainscoting to offer a number of color combinations which have become popular in the treatment of toilet room environments. The catalog contains a color chart of finishes available.

Two pages are devoted to descriptions of Sanymetal Porcena (porcelain on steel) wainscot, a permanent, colorful and easy-to-keep-clean protection and decoration for walls. It is available in panel sizes which comply with the modular system of dimensional coordination. Five types of toilet compartments available in three finishes are shown together with complete specifications and construction details. Information is included also on Porcena shower stalls and dressing room compartments, toilet compartment hardware and typical toilet and shower compartment installations. To obtain a copy of the booklet, Catalog 84 should be requested.—*The Sanymetal Products Company, Inc., 1701 Urbana Road, Cleveland 12, Ohio.*

"School Furniture" Circular — CUB 17

Contains Information on Movable Units

Institutions planning reseating of classrooms or classroom, library or cafeteria units for a new building will find the Heywood-Wakefield circular on "School Furniture" helpful. Tested pieces of tubular movable school furniture, designed according to patterns acclaimed by leading educators and architects as especially adapted to modern educational practices, are illustrated. The circular can be obtained by writing the manufacturer.—*Heywood-Wakefield Company, School Furniture Division, 666 Lake Shore Drive, Chicago, Ill.*

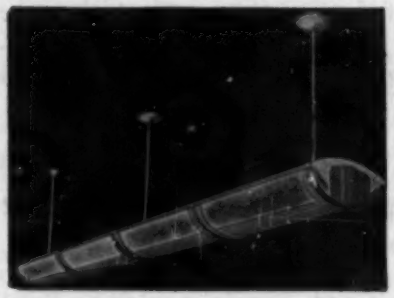
Plastic Slides — CUB 18

Offer Advantages in Preparation, Storage

Slidecraft, a plastic slide to be used in a stereopticon, can be penciled, inked, crayoned, printed or typed upon to help illustrate lectures, assemblies or classroom teaching procedures. After preparation, it can be placed in a lantern for immediate use or stored for use at a later date. It is not made of glass, which may break, nor is it made of celluloid, which may be a fire hazard. Light in weight, several hundred slides weigh only a few ounces and occupy few cubic inches. Finished slides are said to make interesting display projects if mounted on white cardboard or paper.—*Slidecraft Company, 257 Audley Street, South Orange, N. J.*

Fluorescent Lighting Equipment — CUB 19

Gives Effect of Continuous Mounting



The Wakefield Star fluorescent indirect lighting unit, recently announced, has been designed to meet the specific needs of lighting classroom and similar interiors. The company's often repeated advice, "Get the light you pay for; keep lighting equipment clean," was foremost in consideration during the two year development period; the result is a product with efficient light output, good appearance, easy maintenance, low cost of installation, low brightness, dissipation of ballast heat, minimum breakage in shipment and low cost to customer.

Mounted in a continuous line, Stars have no interconnected end-to-end appearance but give the effect of a continuous unit. Moreover, progressive installation of equipment over the years will match, fit and operate properly when used in conjunction with the original equipment, the manufacturer points out. The Star uses two 40 watt fluorescent lamps, accessible from the top of the reflector.

Wakefield's "Over-All Lighting," catalog No. 46, presents engineering details of lighting equipment, construction details with full dimensional data, light distribution curves and tables for estimating lighting results.—*The F. W. Wakefield Brass Company, Vermilion, Ohio.*

Floor Covering — CUB 20

Embodies Durability, Safety, Color

Durability, flame resistance, colorability and resistance to wear and weather, qualities which are said to have become associated with Koroseal, have been embodied in a new type of hard surface floor covering which has just been introduced on the market. The new product is being manufactured by Sloane-Blabon Corporation of Trenton, N. J., under technical supervision of the B. F. Goodrich Company, using the latter's raw material and its trade name of Koroseal. A form of plasticized polyvinyl chloride unsupported by any fabric, the material is available in square flexible tile form in a wide range of brilliant solid colors.—*Sloane-Blabon Corporation, 295 Fifth Avenue, New York, N. Y.*

Floor Machine — CUB 21

Cleans, Waxes, Polishes in One Operation

An "all purpose" drum type of floor machine has been developed that permits cleaning, waxing and polishing in one operation. This three-in-one action is accomplished

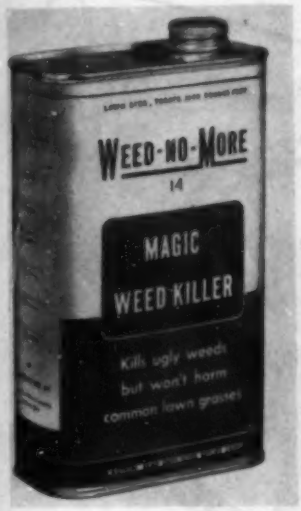
through the use of a hard bar wax cartridge held in contact with a cylindrical brush or steel wool roll.

The new machine, which accommodates both 8 inch and 16 inch accessories, is suitable for all types of floors, working equally well on wood; asphalt, cork, linoleum and concrete. The design permits operation flush with walls, desks and machinery; a vacuum system controls dust in all operations. The machine is available with accessories for dry cleaning, waxing, polishing, scrubbing, sanding and sweeping.

Illustrated bulletin 81.2B and further details about construction and operation can be obtained from the manufacturer.—*G. H. Tennant Company, 2530 North Second Street, Minneapolis 11, Minn.*

Grounds Superintendents — CUB 22

Will Sing Praises of Lawn Beautifier



Weed-No-More is not the title of a song, though it may inspire one among buildings and grounds superintendents; it is the name of a new product announced by Sherwin-Williams and its affiliates to provide inexpensive but effective treatment of lawns. An ester of 2,4-D (Dichlorophenoxyacetic acid), it destroys most broad leaf weeds, without harm to common lawn grasses. Mixing perfectly with water, it is easily sprayed on the lawn, thus eliminating back-breaking weed digging to the end that its users will "weep no more." The finance officers will be happy, too, for the 8 ounce package, which treats 1600 square feet, sells for $1; the quart size, for larger areas, for $2.98.

This new product is being distributed through hardware and drug jobbers.—*The Sherwin-Williams Company, Midland Building, Cleveland, Ohio.*

Modern Lighting — CUB 23

For School Units Is Described

"Arches of Light . . . for Modern Schoolrooms," Brochure Y-551, has just been released by General Electric. Printed in full color, the 12 page booklet features the creative ideas of E. Post Tooker, member of the National Education Council and writer of articles on various phases of school planning. His ideas for modern lighting of the office, the classroom, the auditorium and laboratory are portrayed in brief copy and large illustrations.—*Lamp Department of General Electric, Nela Park, Cleveland 12, Ohio.*

Tubular Furniture — CUB 24

Discussed in Illustrated Catalog

A new, handsome, sturdy, long-wearing line of tubular furniture to meet the requirements of dormitories, recreational facilities, reception rooms and offices is described in the Doehler Metal Furniture Company's colorful, illustrated catalog. Descriptions of chrome plated furniture and equipment, aluminum furniture, baked enamel furniture, booth equipment, costumers, floor lamps, table lamps and smokers are included, and, to help visualize the completed interior, a coated fabric color card is attached. On campuses where newly constructed buildings are to be furnished or where redecorating is planned, the catalog will be of assistance. Anyone influential in the purchasing of this type of furniture can obtain a copy of the catalog by writing on his institution's letterhead to the manufacturer. "Doehler Tubular Furniture," catalog No. 84, should be requested.—*Doehler Metal Furniture Company, Inc., 192 Lexington Avenue, New York 16, N. Y.*

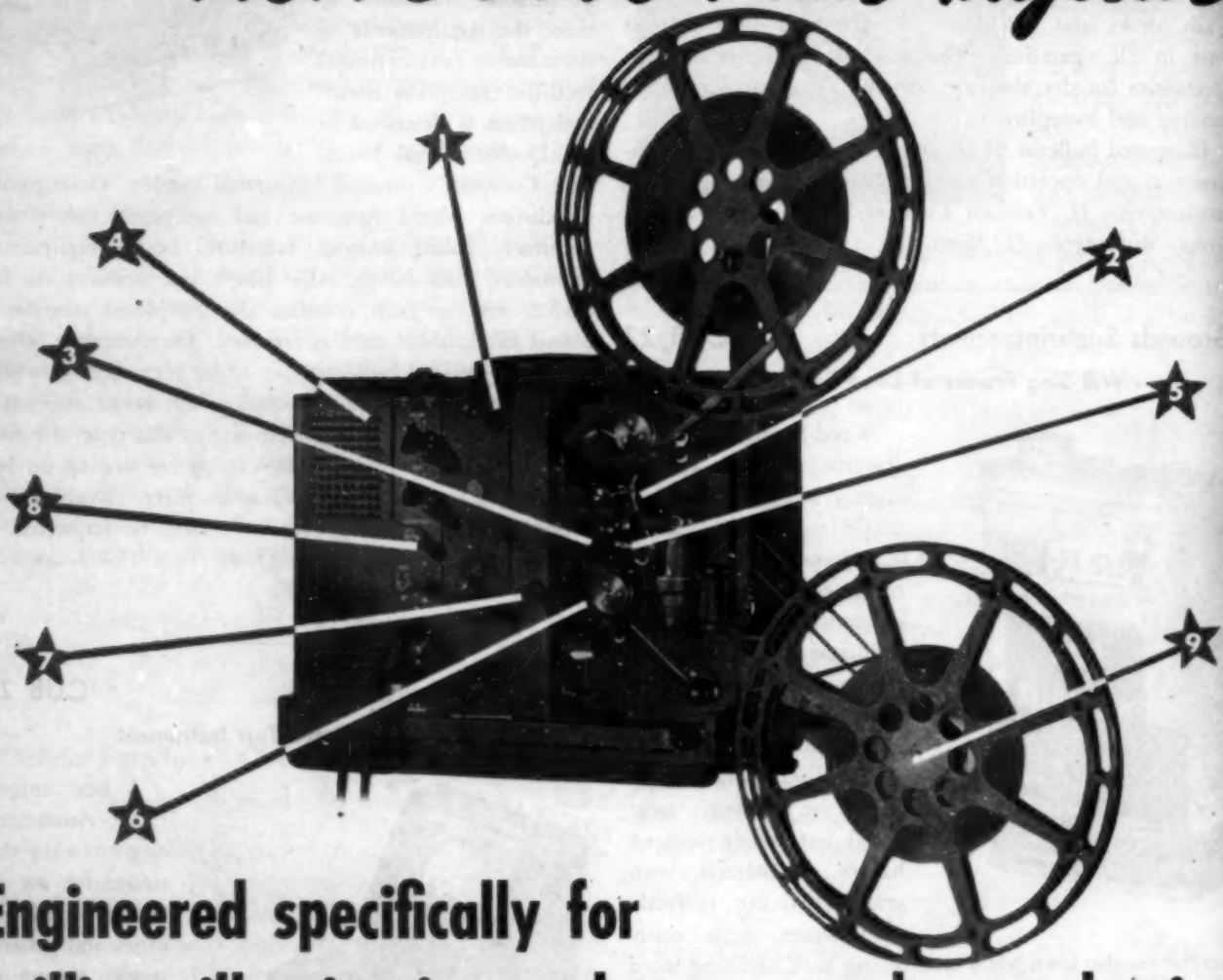
Voltage Measured — CUB 25

By New Portable Test Instrument

A new unique "Volt-Ammeter," especially designed for use in colleges, laboratories and general service testing as well as by amateurs, has been announced by Reiner Electronics Company. Its outstanding feature is that, in measuring voltage or current, the user connects the individual shunt or multiplier into the circuit manually and immediately visualizes the specific circuit connection and range. Such an arrangement permits a greater variety and flexibility of ranges than are said to be available in the average multi-tester. The meter, shunts and multipliers are accurate to 1 per cent. Model No. 333, shown in the accompanying illustration, has a hermetically sealed unit and is guaranteed for a period of ten years.

Four models are now in production: Model No. 333 for D.C., Model No. 334 for A.C.-D.C., School Model No. 343 for D.C. and School Model No. 344 for A.C.-D.C. A catalog is available upon request.—*Reiner Electronics Company, Inc., 152 West Fifty-Second Street, New York 1, N. Y.*

NINE-STAR PERFORMANCE with the *RCA Sound Film Projector*



Engineered specifically for brilliant illumination and true sound reproduction!

1. Correctly engineered light system provides better illumination. Consists of: 750- or 1000-watt Lamp; Silver-Coated Pyrex Glass Reflector; two-element Condenser Lenses.
2. Fast two-inch, F1.6 Projection Lens—For brilliant illumination, contrast and clarity.
3. RCA Sound Stabilizer—maintains uniform film speed for sound take-off. It assures sound reproduction at the exact pitch at which it was originally recorded.
4. Powerful Four-Stage Amplifier—Utilizes "inverse feed-back" to bring you voice, music and sound as originally recorded.
5. Precision Engineered Filter—Maintains sound reproduction at exact recorded pitch.
6. 16-tooth Drive Sprockets provide for long film life.
7. Professional Theatrical Framing.
8. Provision for Microphone or Phonograph Turntable.
9. Even-Tension Take-Up—Assures automatic and uniform film take-up action.

For detailed information on the RCA Sound Film Projector, send for descriptive booklet. Write Educational Department, 91-G, Radio Corporation of America, RCA Victor Division, Camden, N. J.

EDUCATIONAL DEPARTMENT

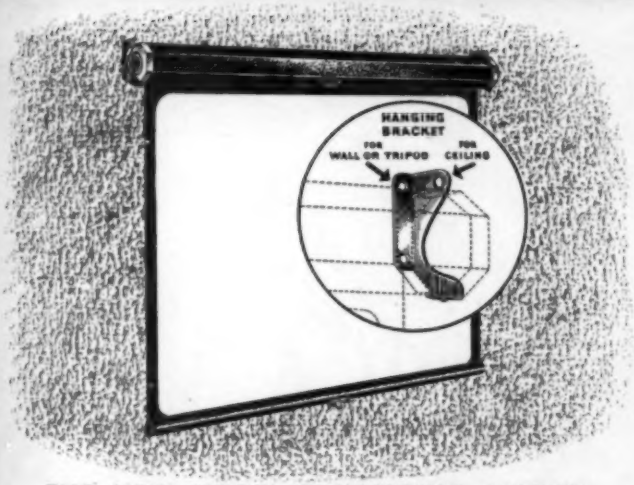
RADIO CORPORATION of AMERICA

RCA VICTOR DIVISION, CAMDEN, N.J.

DA-LITE *Presents*

Two GREAT NEW SCREENS!

THE NEW CHALLENGER • Better than ever • Simpler to operate • Sturdier • More durable • Glass-Beaded surface



THE NEW MODEL B HANGING SCREEN

New octagon-shaped metal case allows screen to roll in and out without rubbing fabric against edge of case opening.

For Still Better Projection of Visual Aids

THE NEW CHALLENGER

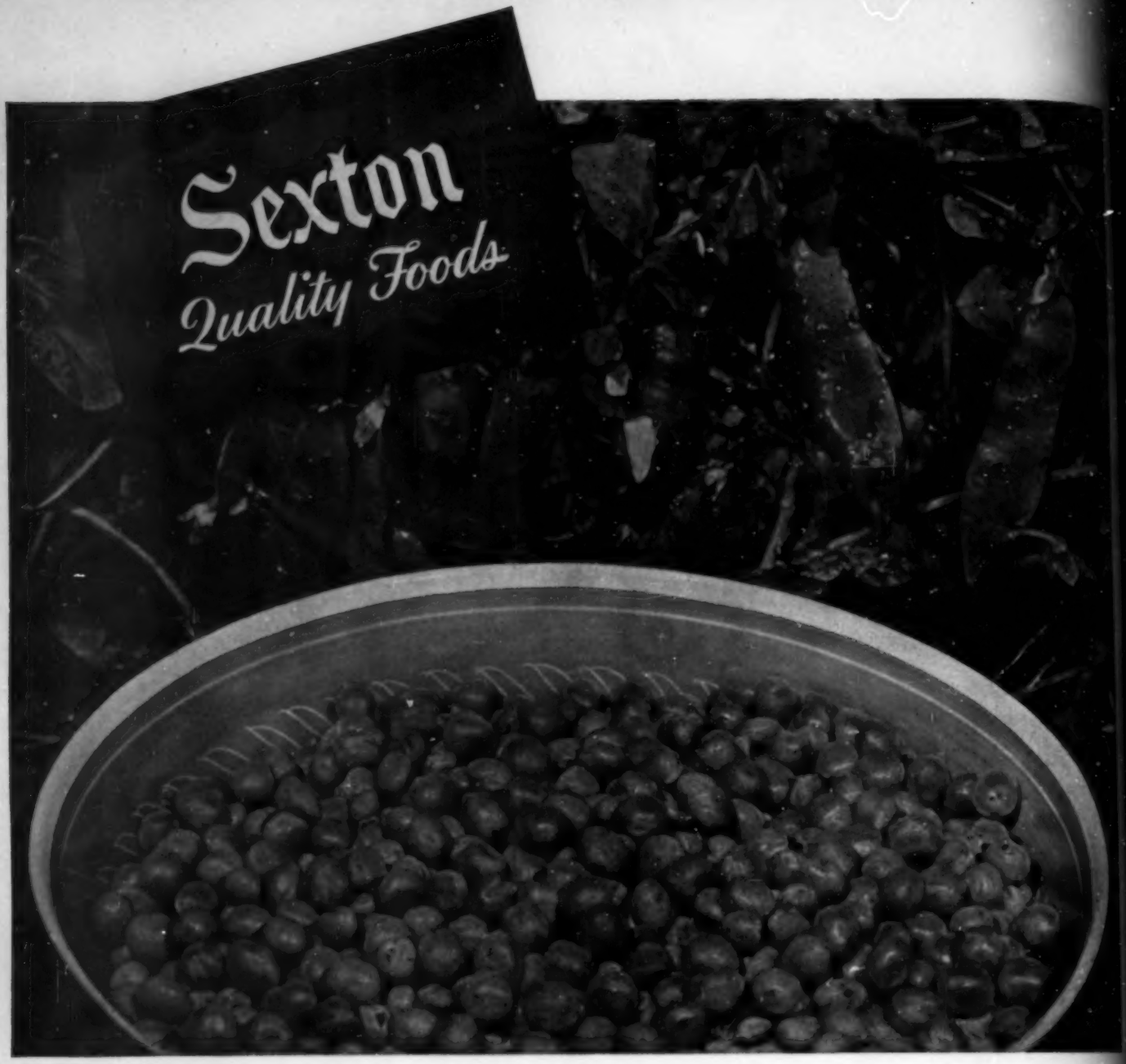
Trim, sturdy, smart in appearance—the new Challenger offers greater convenience and finer light reflective qualities than have ever before been available in a portable screen! Its new *octagon-shaped case* provides better protection for screen fabric. The new *ridge-top tripod legs assure greater stability.* Its new *"Slide-A-Matic" locking* eliminates external locking devices—simplifies setting up the screen and adjustment of height. The new Challenger gives you everything that you have always wanted in a tripod screen.

THE NEW MODEL B

This new Da-Lite hanging screen has also been improved throughout. It has the same distinctive octagon case and finer glass-beaded fabric as the new Challenger. It is ideal for classrooms and auditoriums or wherever a semi-permanent installation is needed. See these new screens at your Visual School Supply Dealer's. Write for descriptive literature. Address Dept. 7CUB.

DA-LITE
(Reg. U. S. Pat. Off.)

DA-LITE SCREEN COMPANY, Inc.
2723 NORTH CRAWFORD AVENUE, CHICAGO 39, ILLINOIS



Garden-fresh FLAVOR

GOOD FOOD FOR
PLEASED GUESTS

The freshness of the dew-drenched Peas, plump in the pod, is captured in the field-to-can Sexton packing process. If they were picked the morning you serve them they couldn't taste better. Every Sexton canned vegetable is the selection of experts from the prize varieties of the most favorable soil and climate. Serve them the year round—you can count on their quality, their uniformity, and on that extra serving in each can that means added economy.

JOHN SEXTON & CO. 1964